

Global Frog Diversity

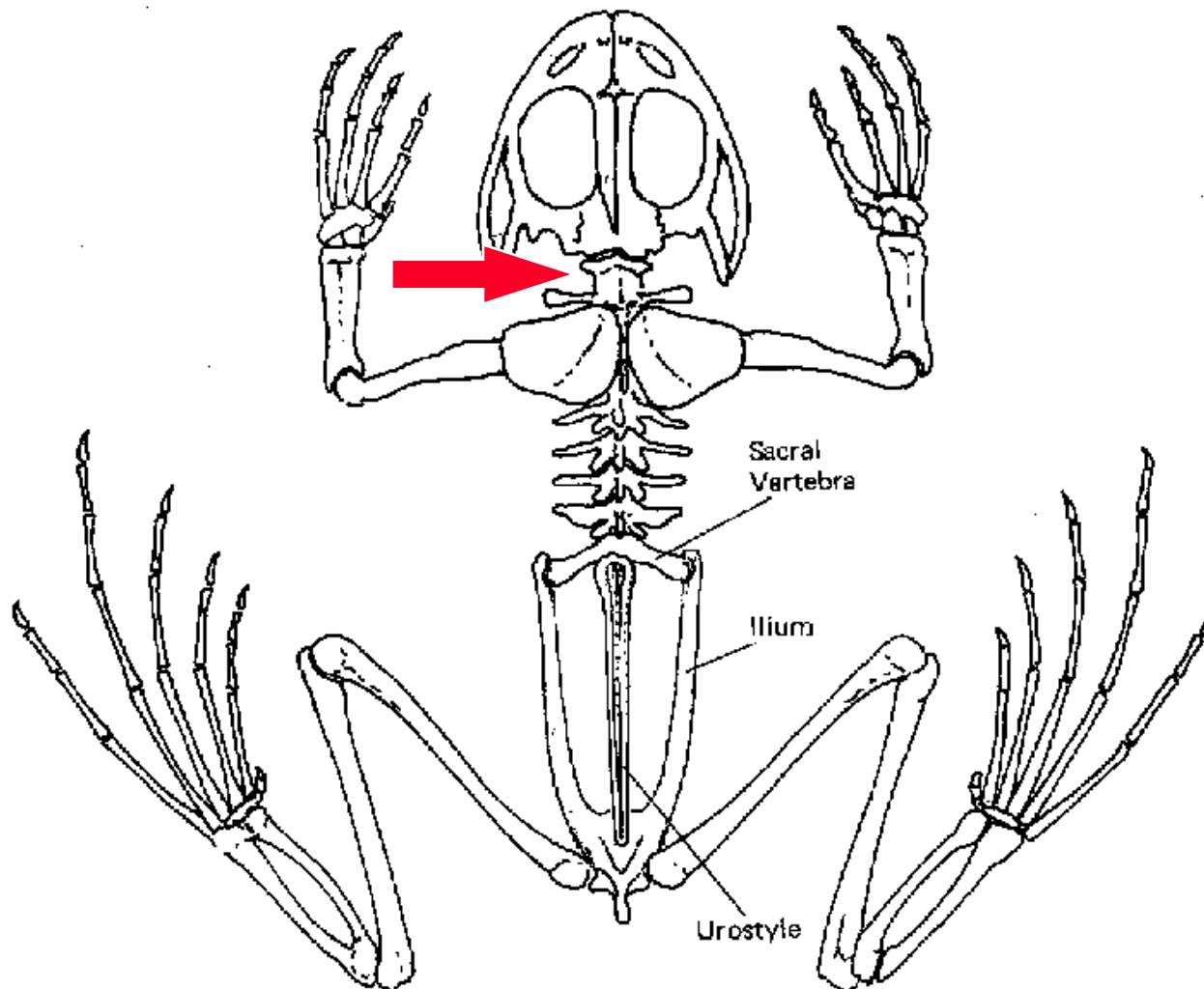


General Visible Characteristics

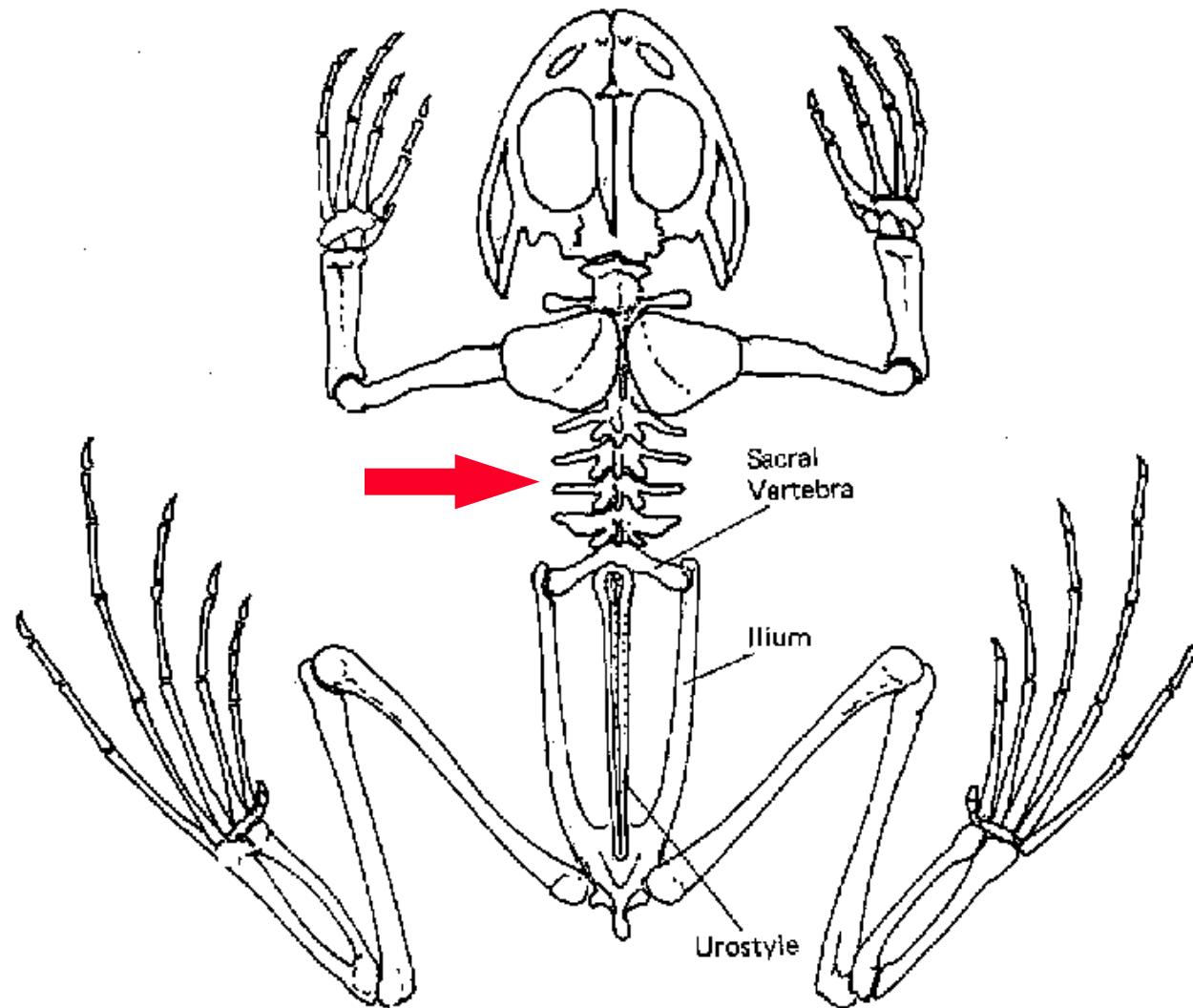
- No distinct neck region.
- Trunk shortened.
- Adults without tail.
- Hindlimbs w/ 4 segments.
- Hindlimbs longer than forelimbs.
- Eyes well developed.
- Tympanic membrane usually present



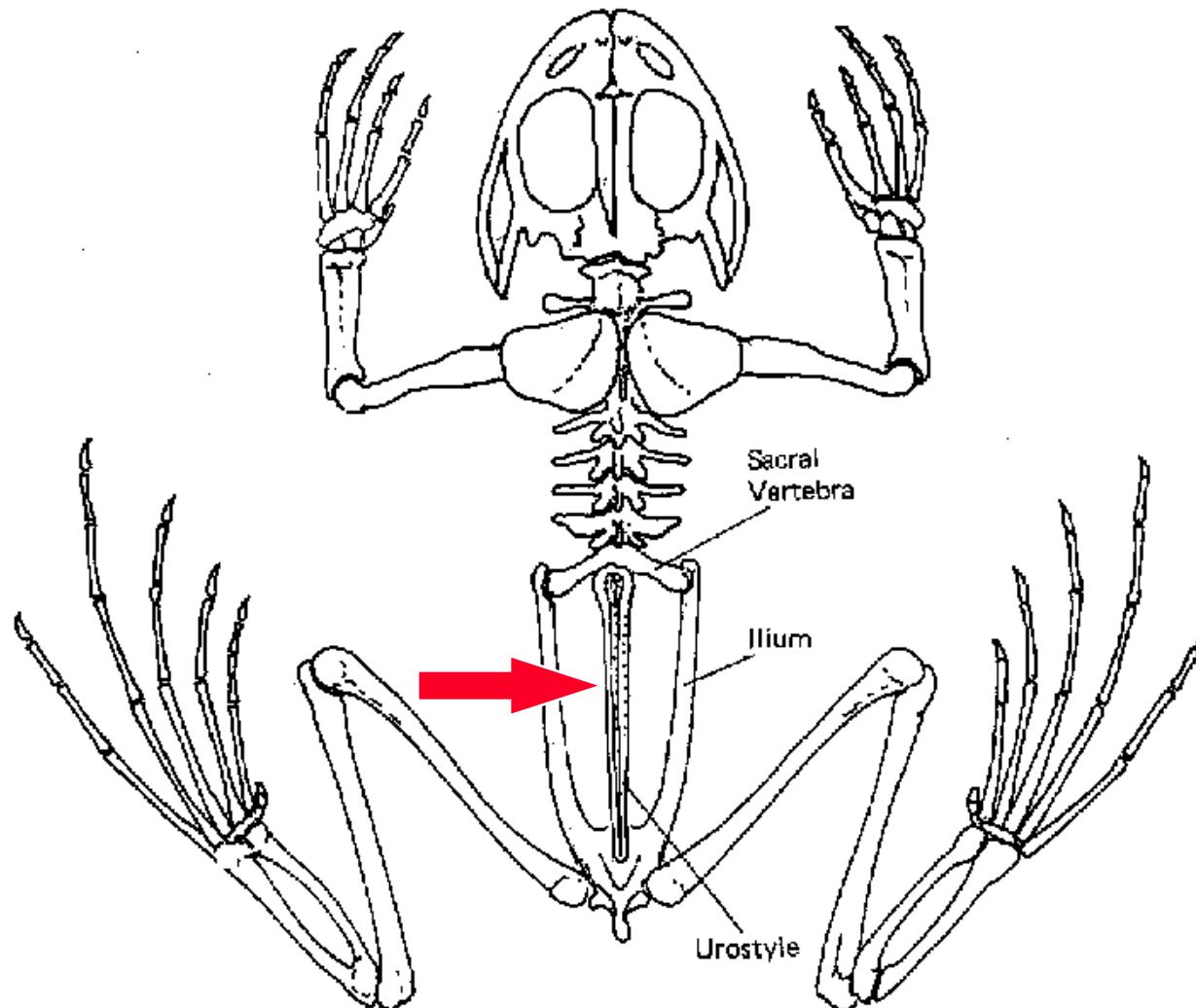
No distinct neck region



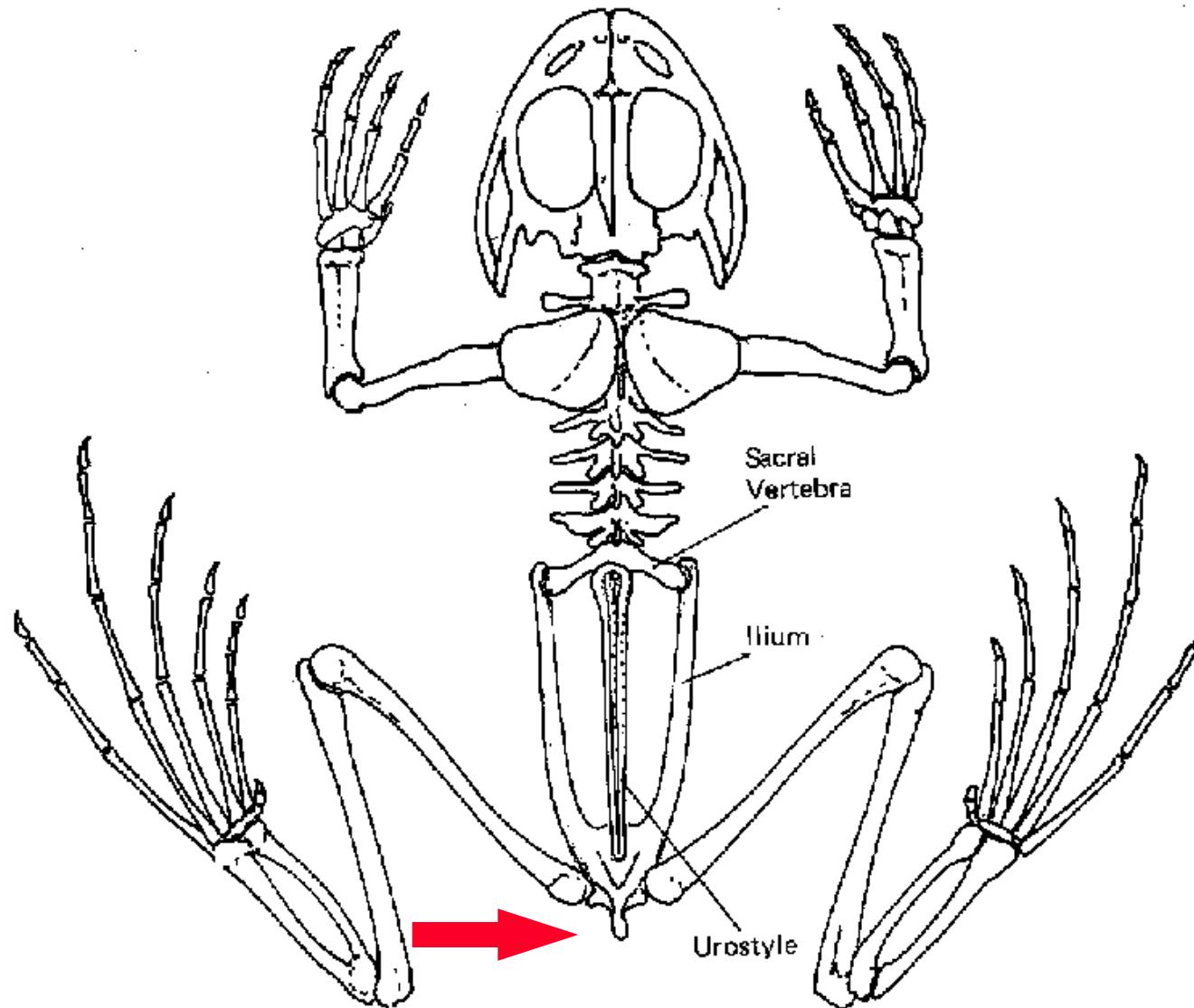
Trunk shortened (5-9 presacral vertebrae)



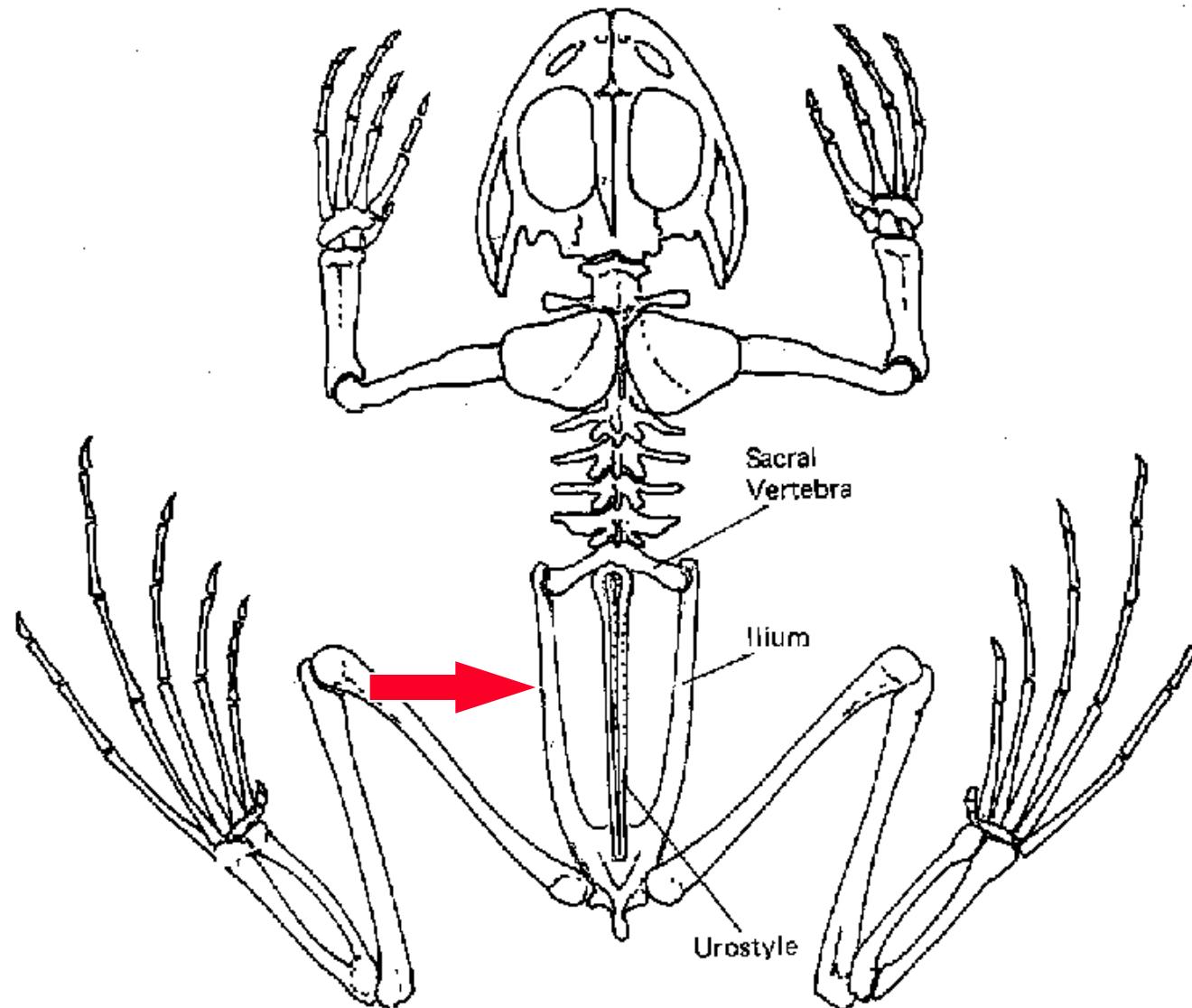
Postsacral vertebrae fused to form urostyle



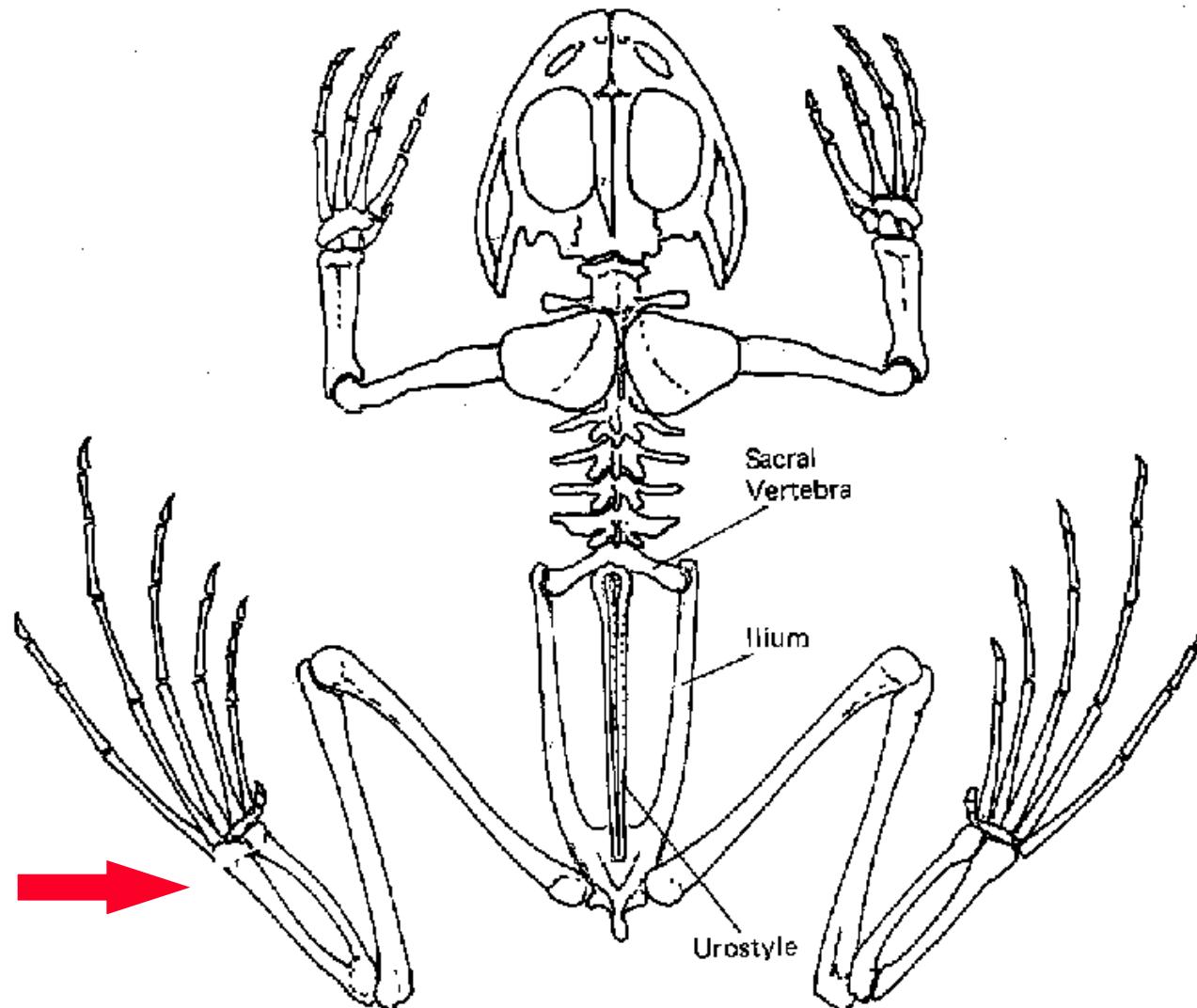
Adult lacks a tail



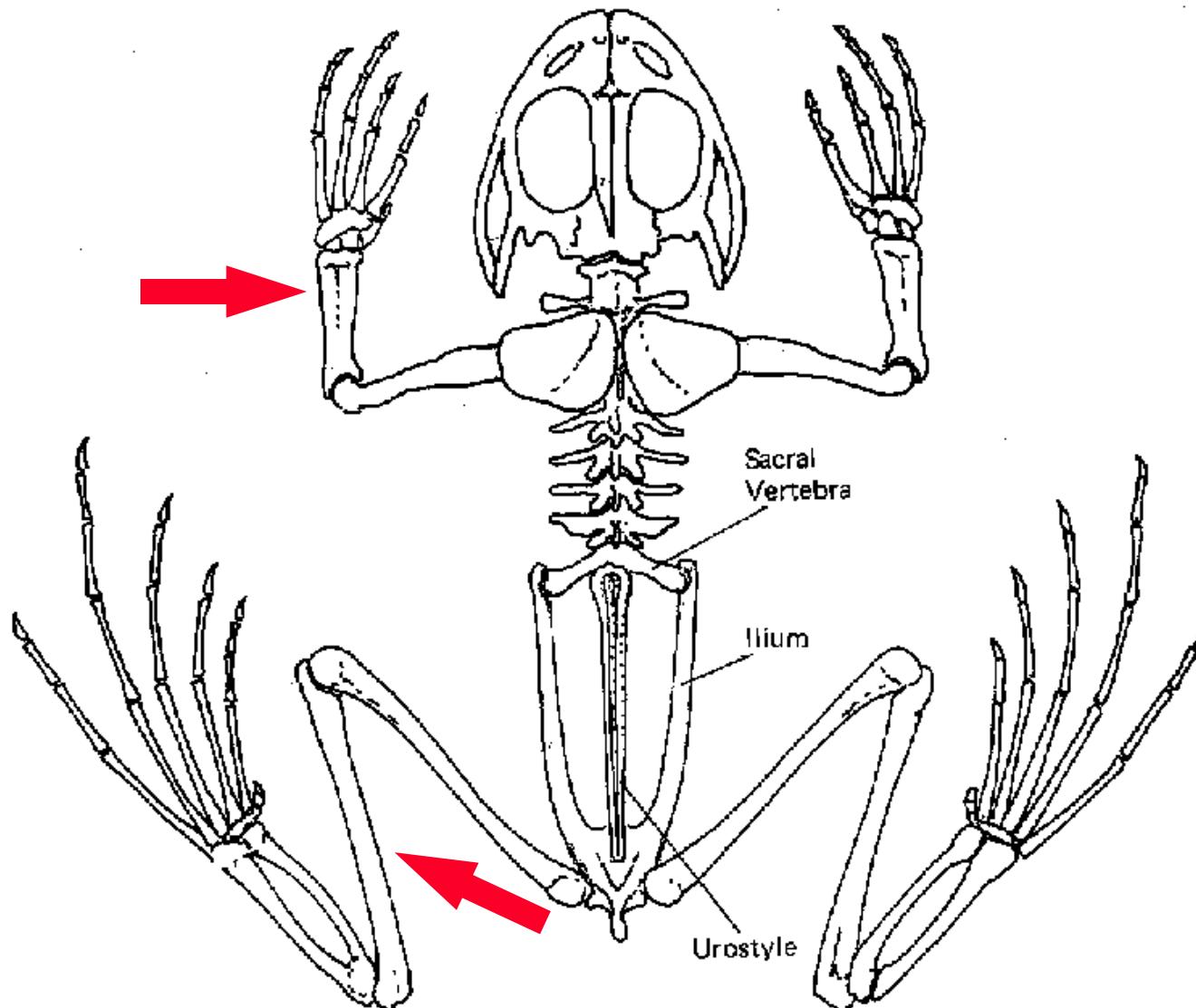
Iliac portion of pelvic girdle elongated



Hindlimbs with four segments; much longer than forelimb

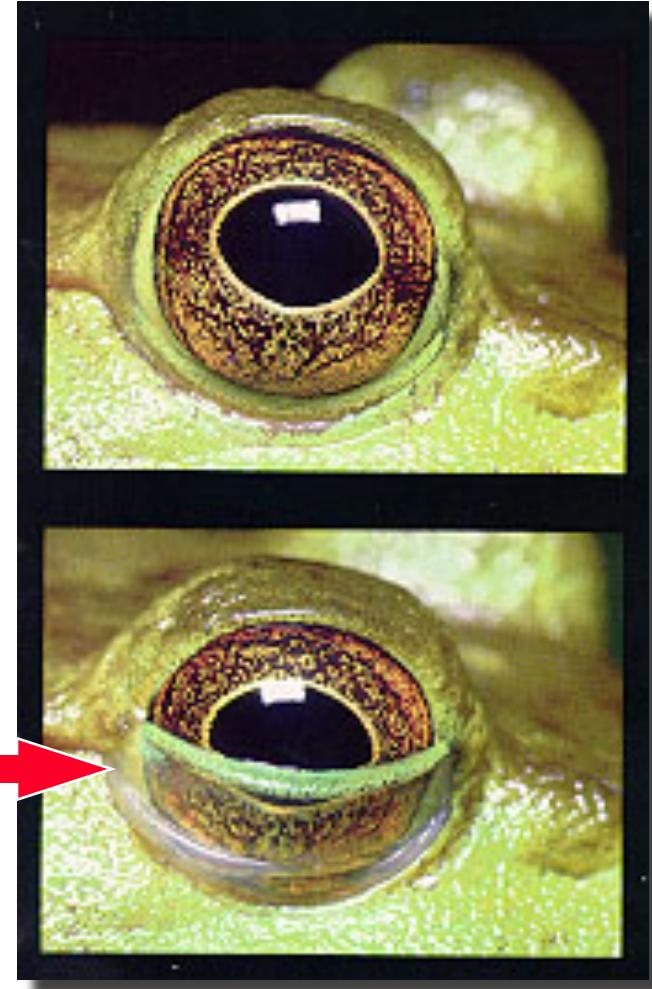


Radius fused to ulna; tibia fused with fibula



Eyes well developed;
movable eyelid

Nictitating membrane



Tympanic membrane and middle ear cavity

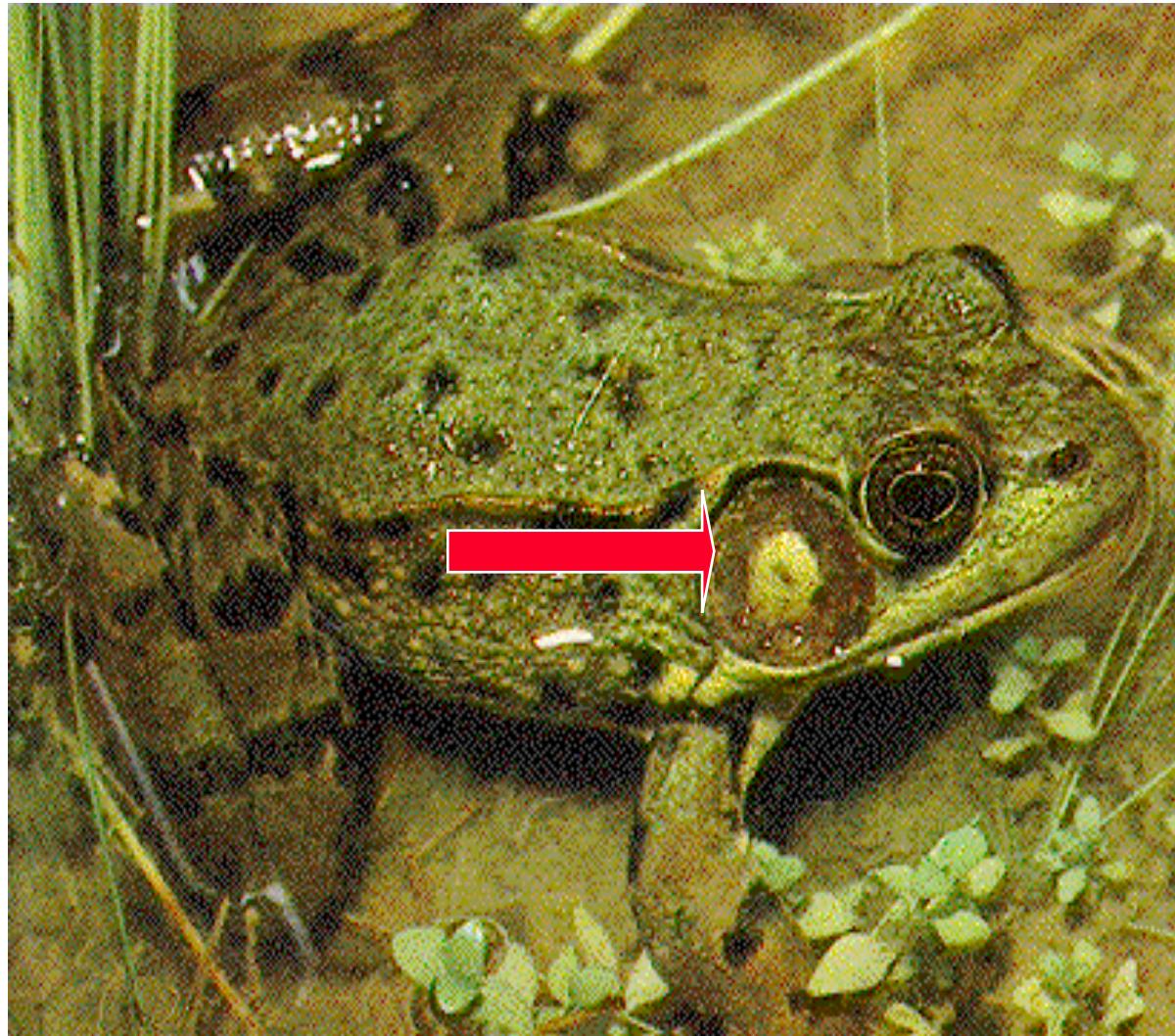
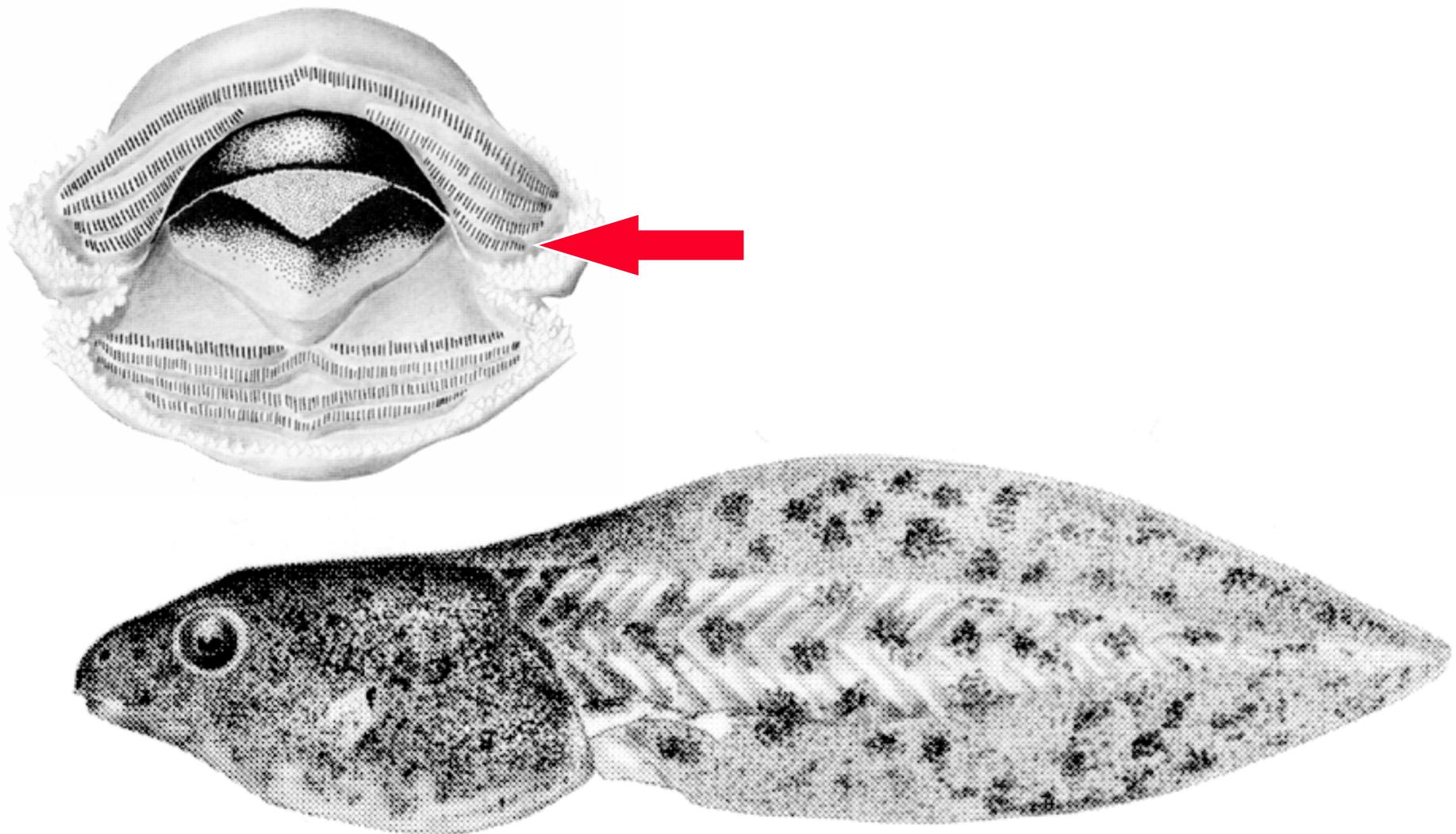


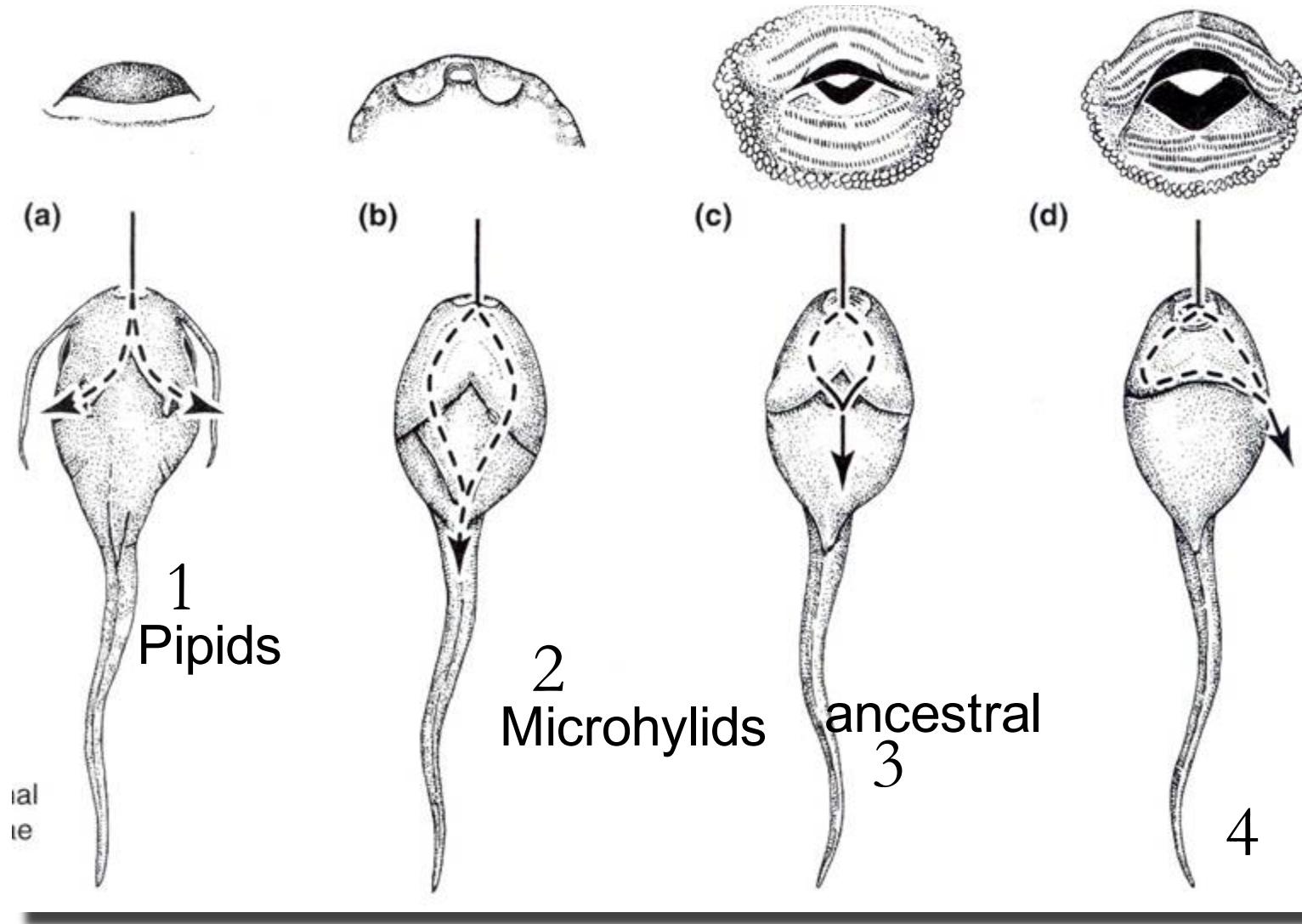
Figure 188. Jack Dermid. Behler and King. 1979. The Audubon Field Guide to North American Reptiles and Amphibians.

Larvae without true teeth

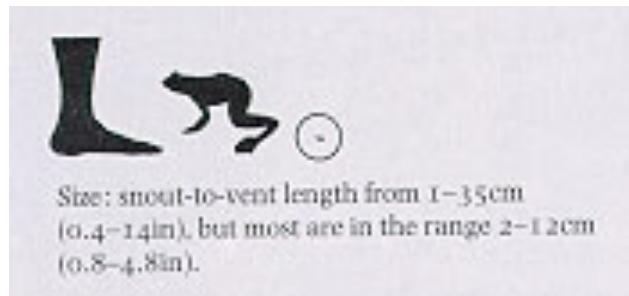


Rana palmipes. Figure 6-12 and 6-13. Page 158. Duellman and Trueb. 1986. Biology of Amphibians.

Tadpole Types



Characteristics: Size



(Halliday and Adler 1986)



The tiny frog sits easily on a US dime, whose diameter is 18mm

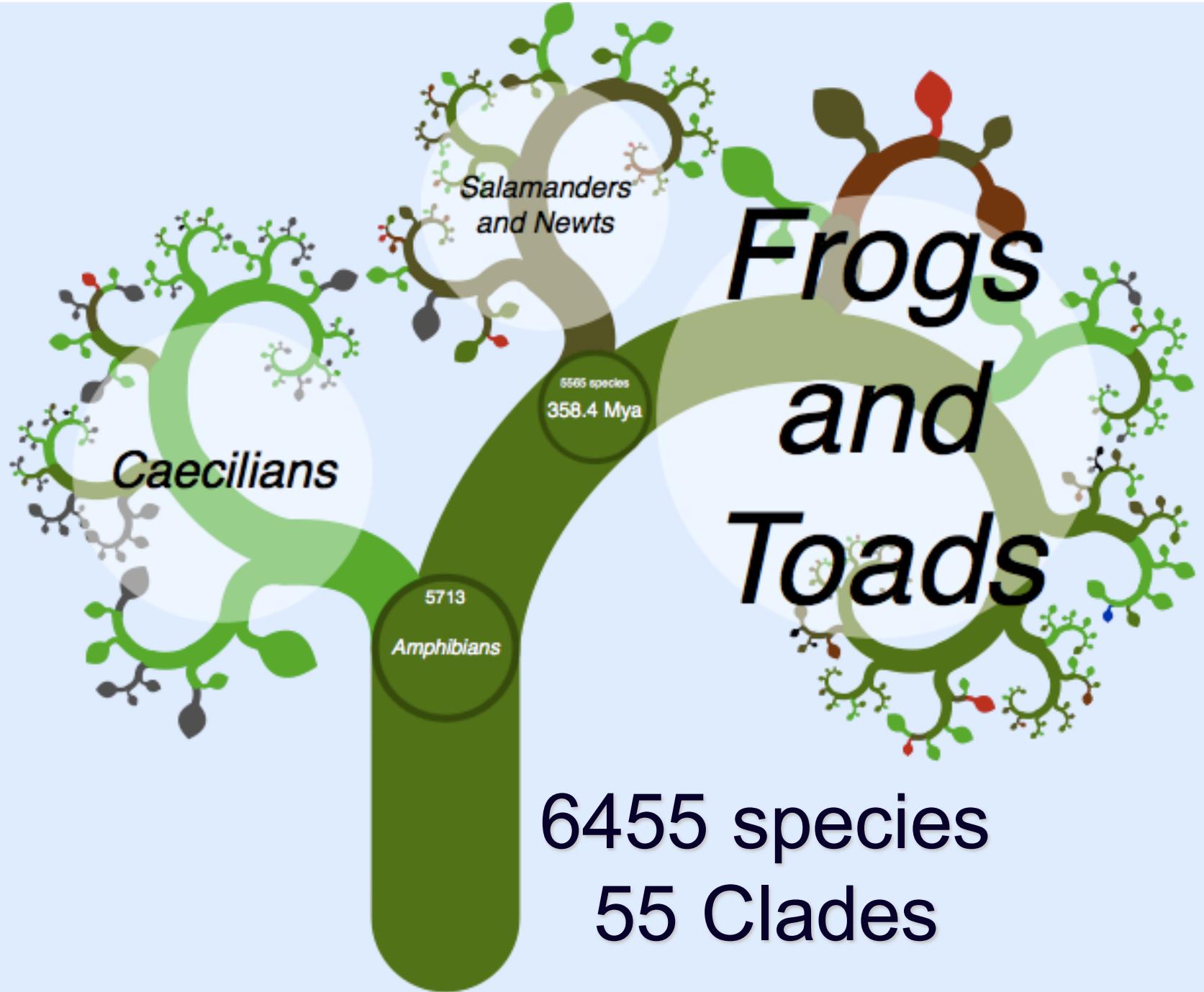
Paedophryne amauensis
– PNG

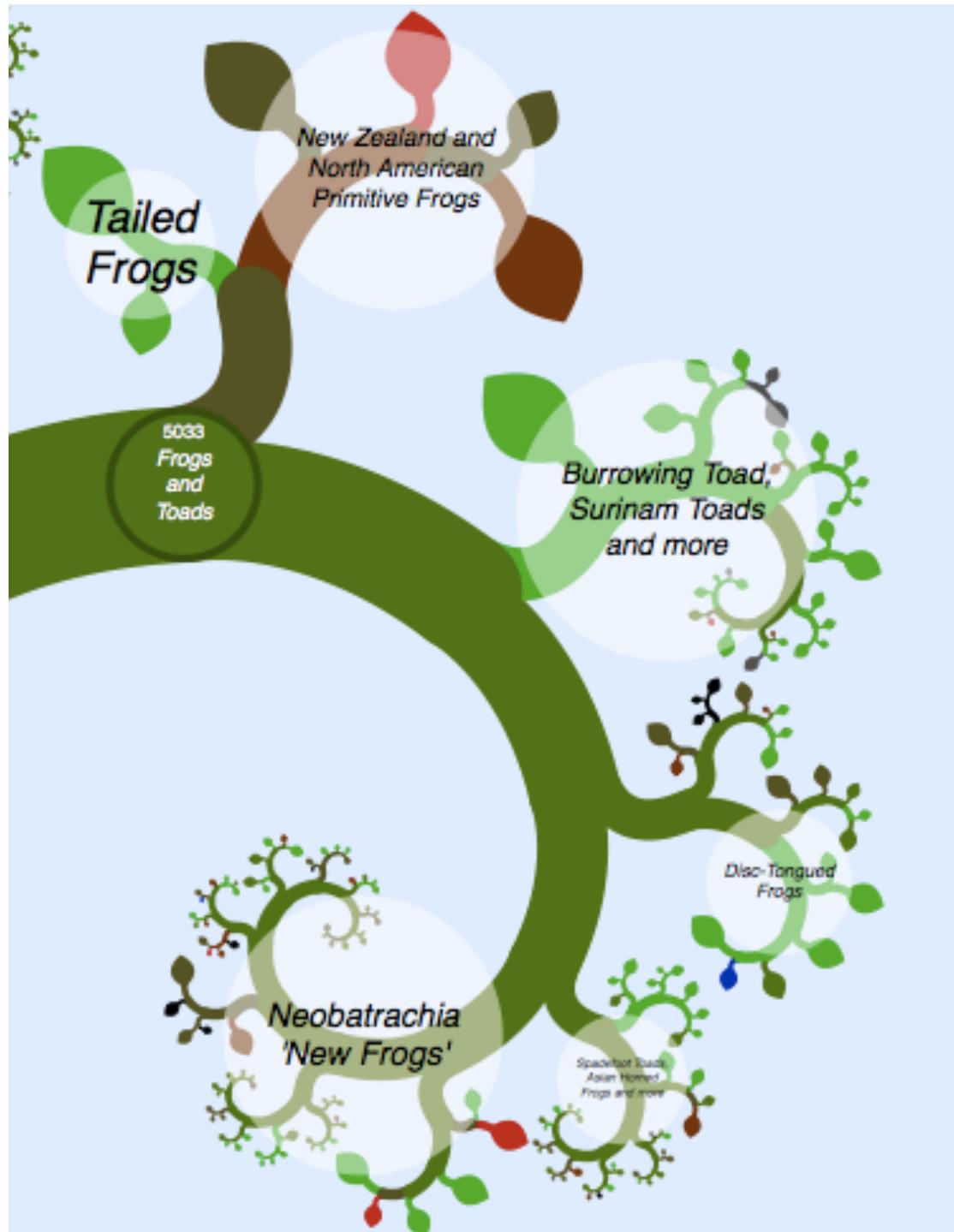


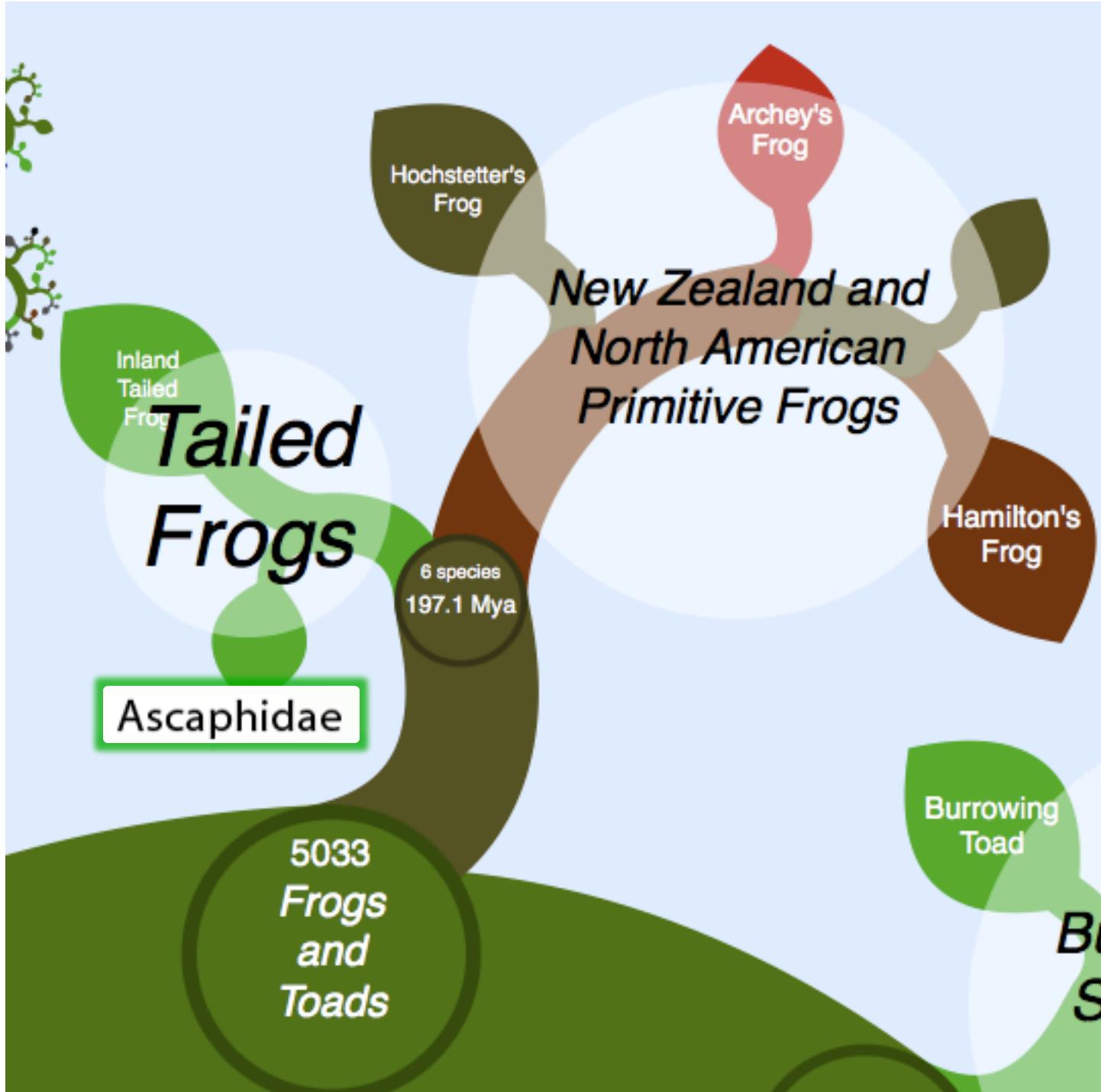
Conraua goliath

Global Distribution of Anura



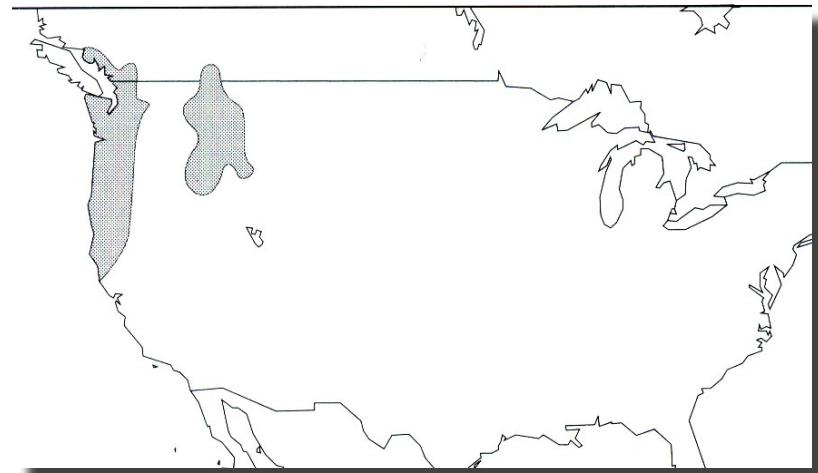






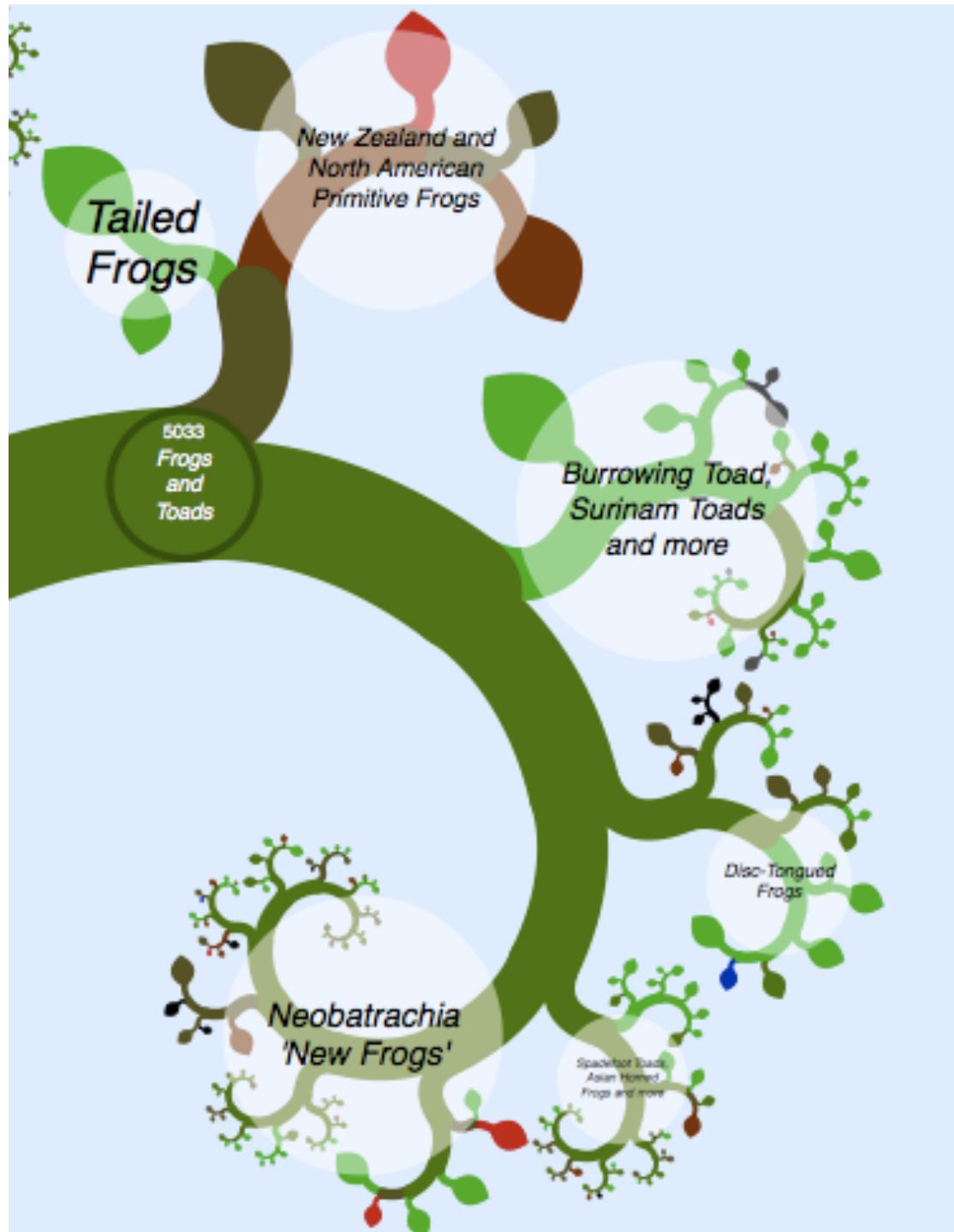
***Ascaphidae** Tailed frogs

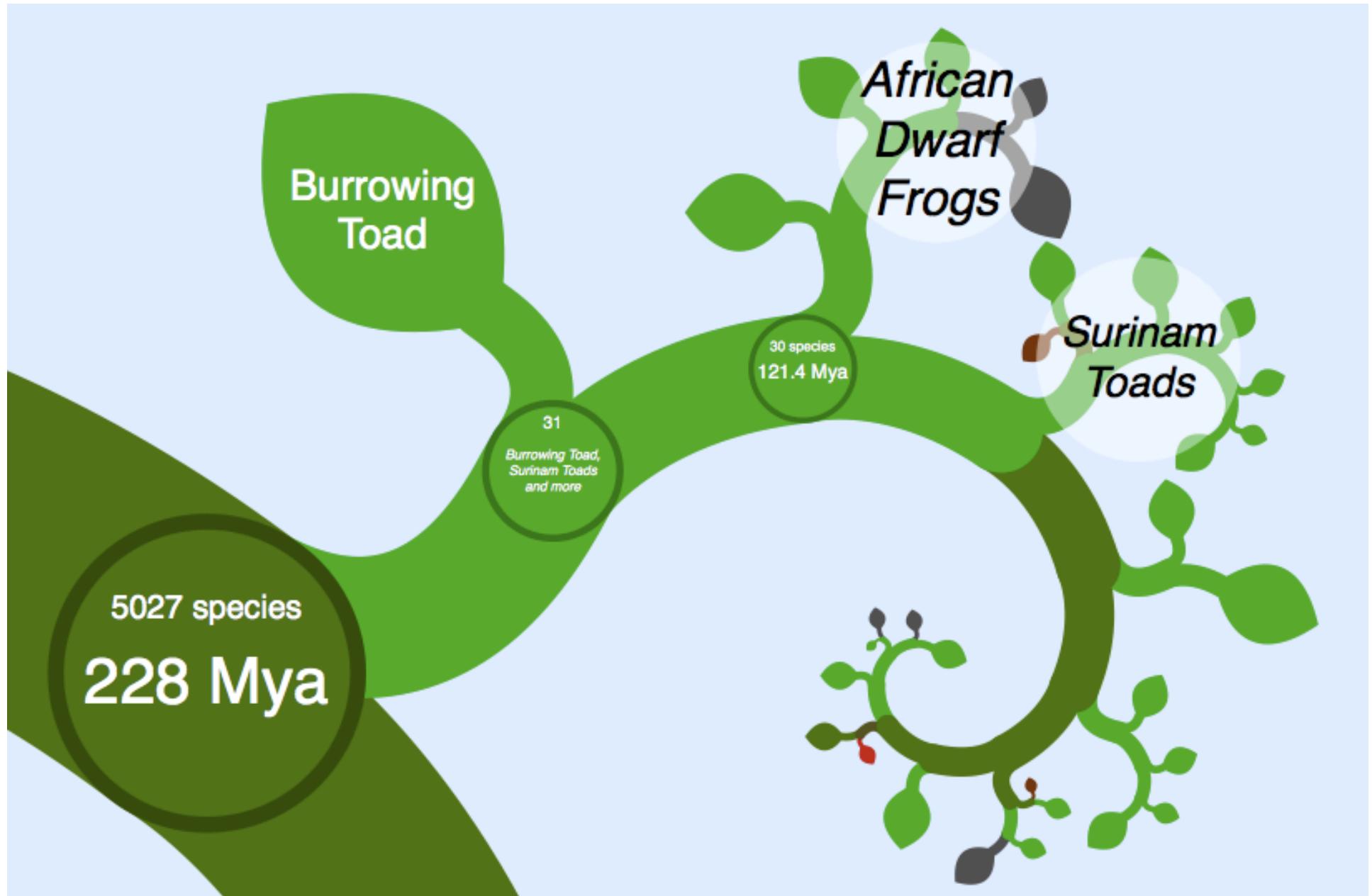
1 Genus 2 Species



- Most basal frog (Jurassic)
- Internal fertilization (tail extension of cloaca)
- Require cold, swift streams
- Larvae modified oral discs







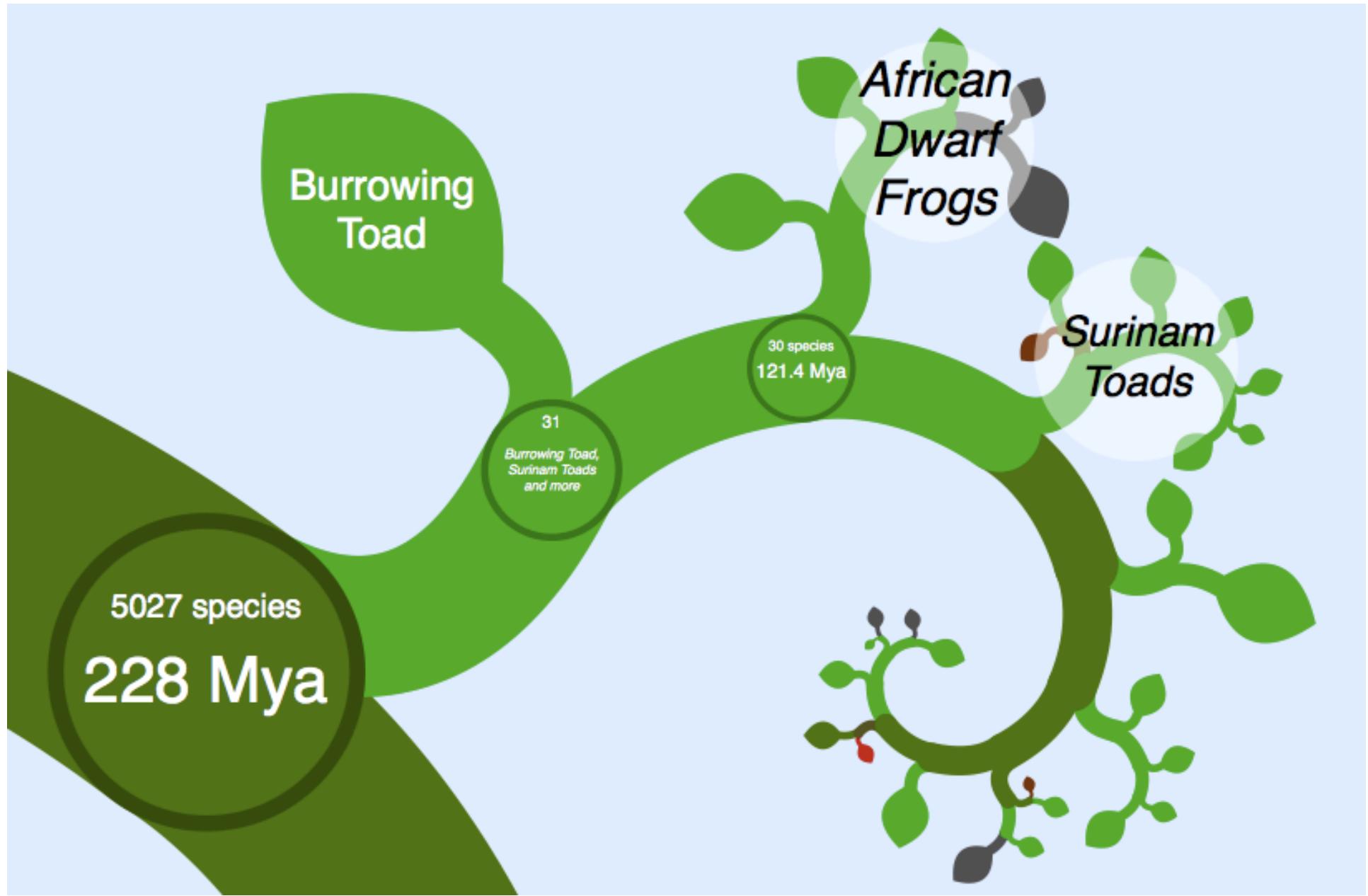
Rhinophryidae

Burrowing
Toad



Rhinophryne dorsalis
Paddy Ryan

Rhinophryne dorsalis
Guillermo Lopez Leal



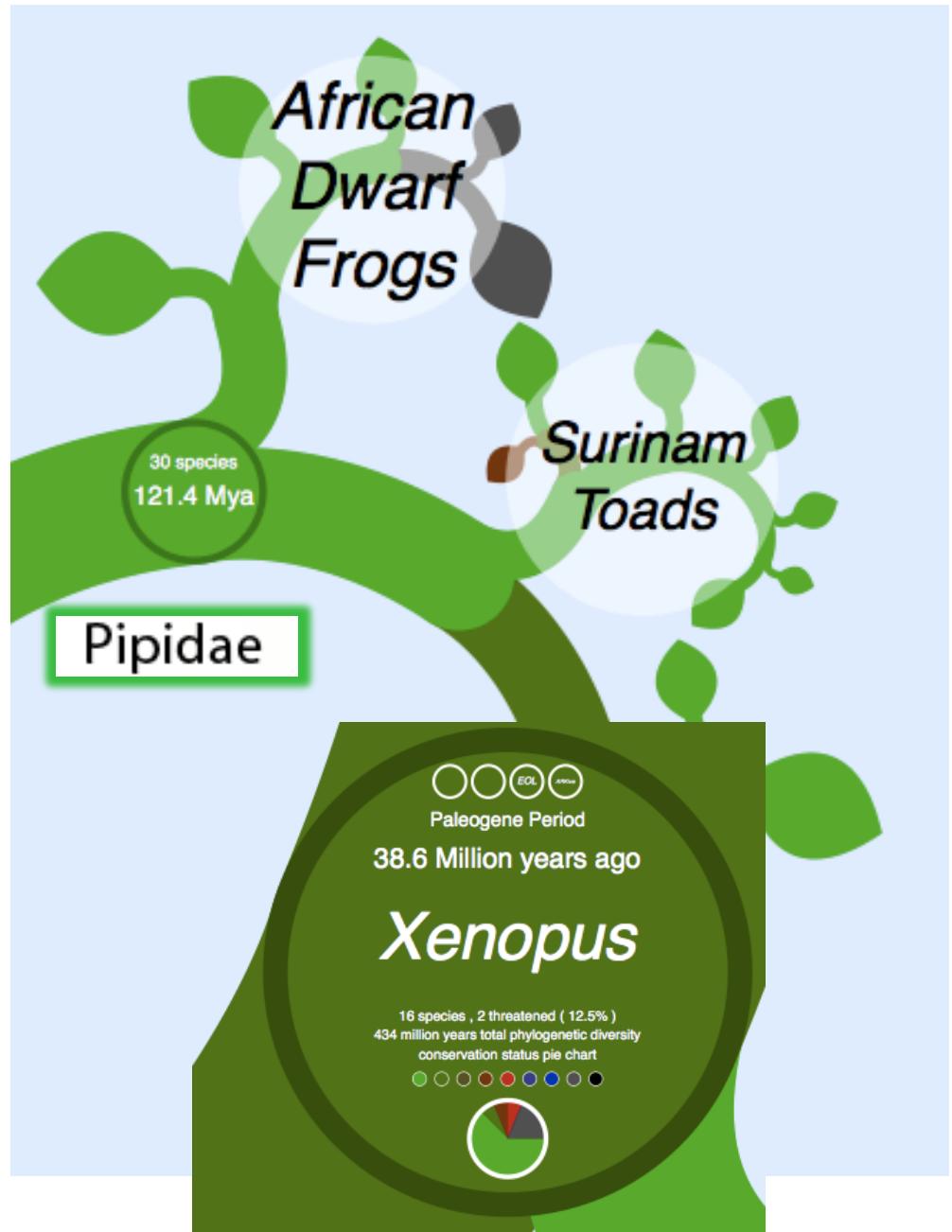
*Pipidae

Tongueless Frogs

4 Genera, 33 Species



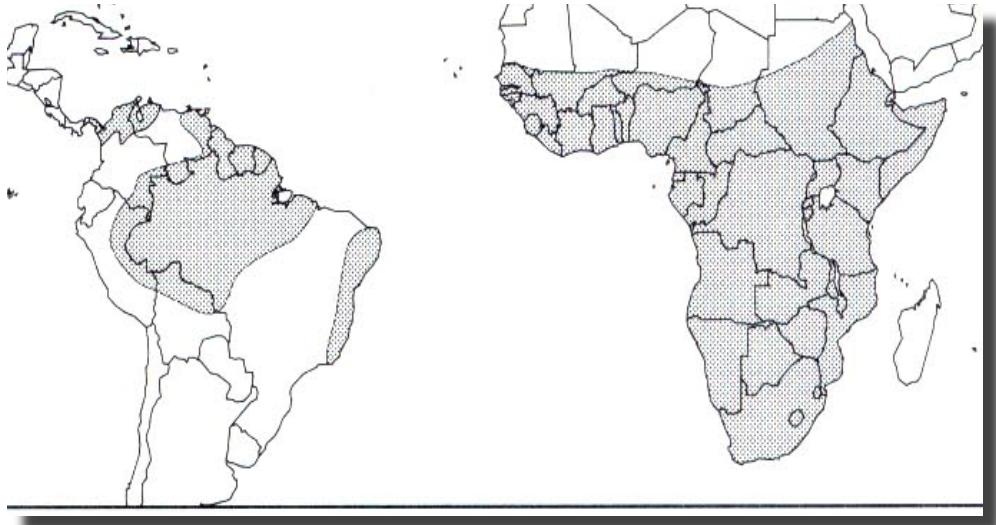
Pipa pipa
Cogger and Zweifel eds. 1998



*Pipidae

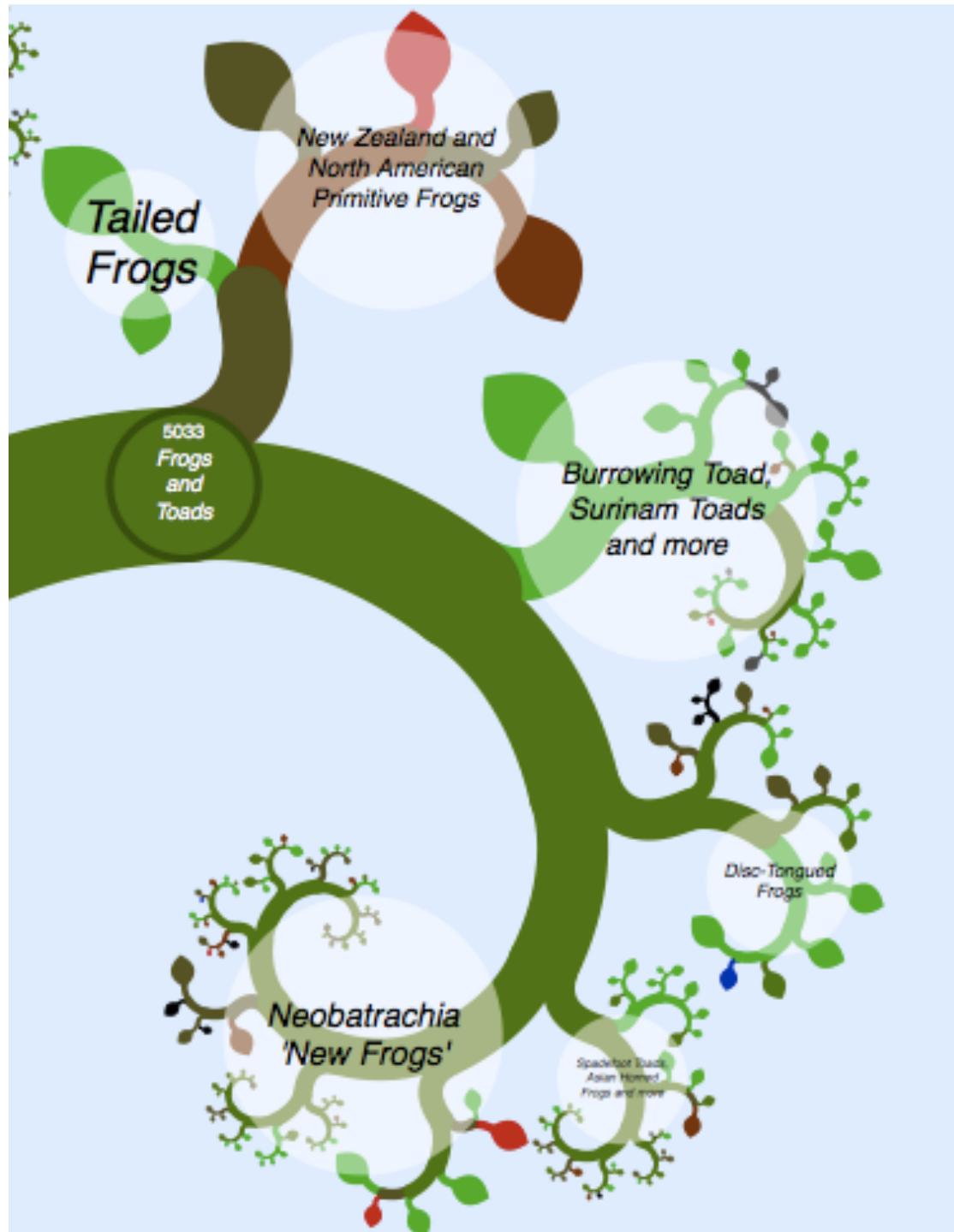
Tongueless Frogs

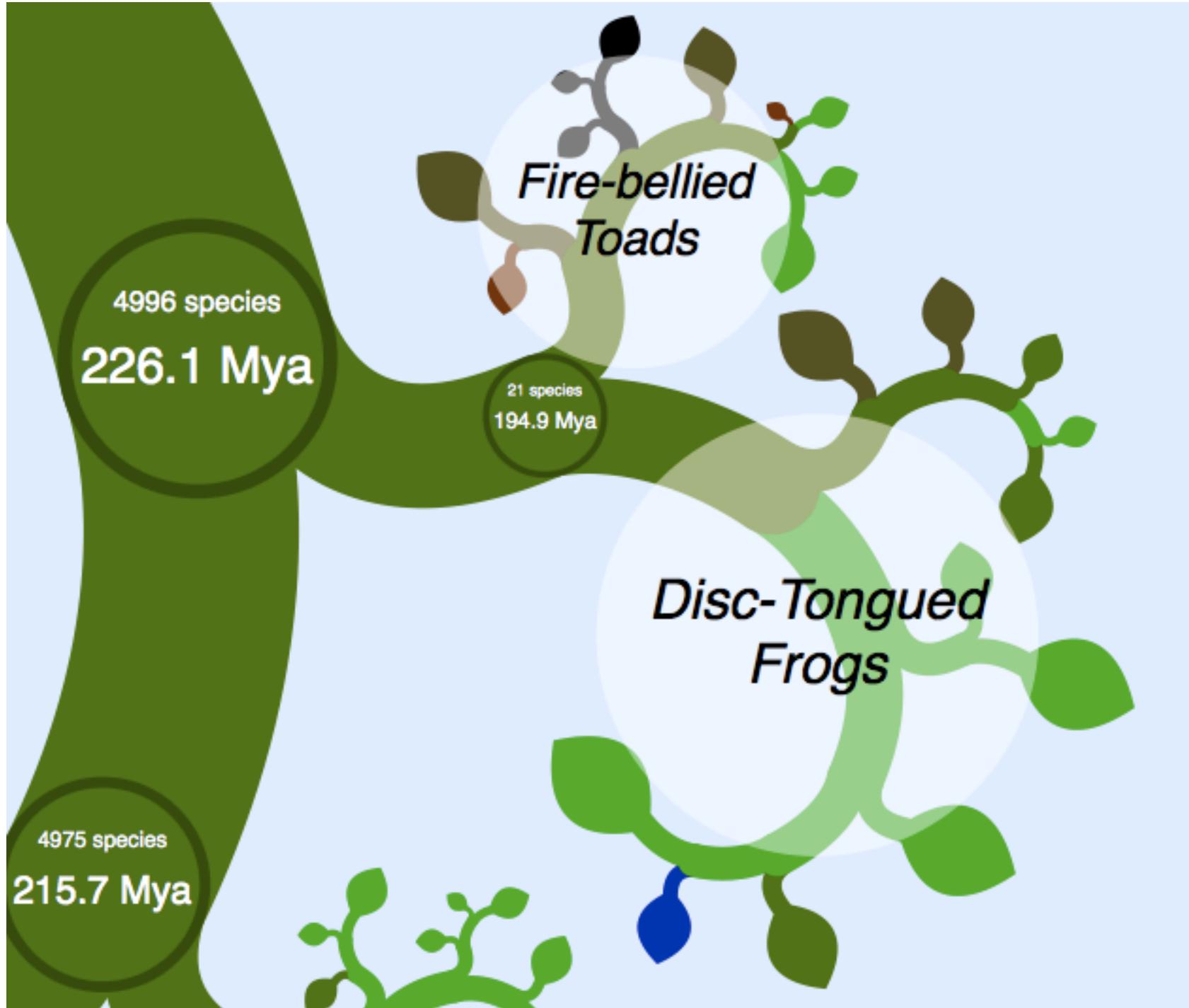
4 Genera, 33 Species

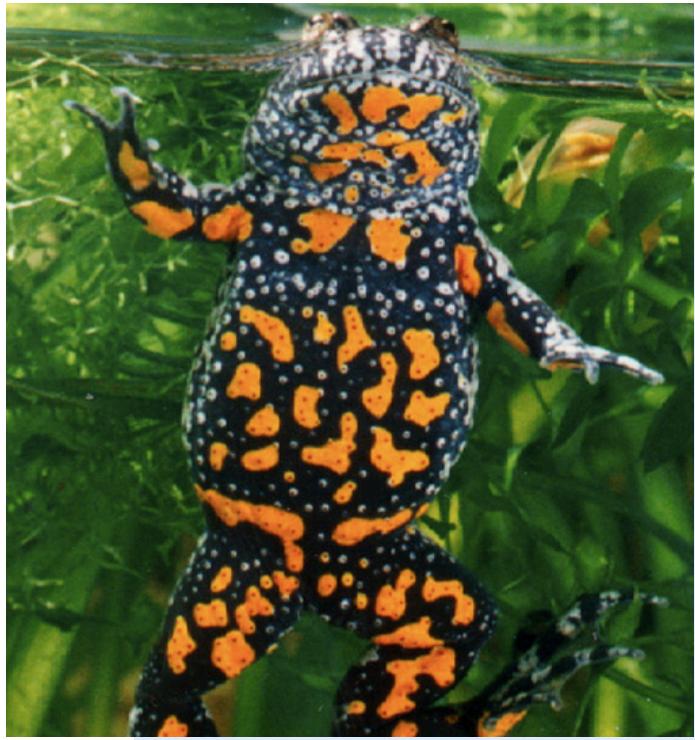


Pipa pipa
Cogger and Zweifel eds. 1998

- Lack tongues (suction feed)
- Lateral line
- Bodies dorsoventrally compressed
- Limbs splayed laterally
- Fully webbed feet
- Toes with keratinous tips
- *Xenopus* model organism

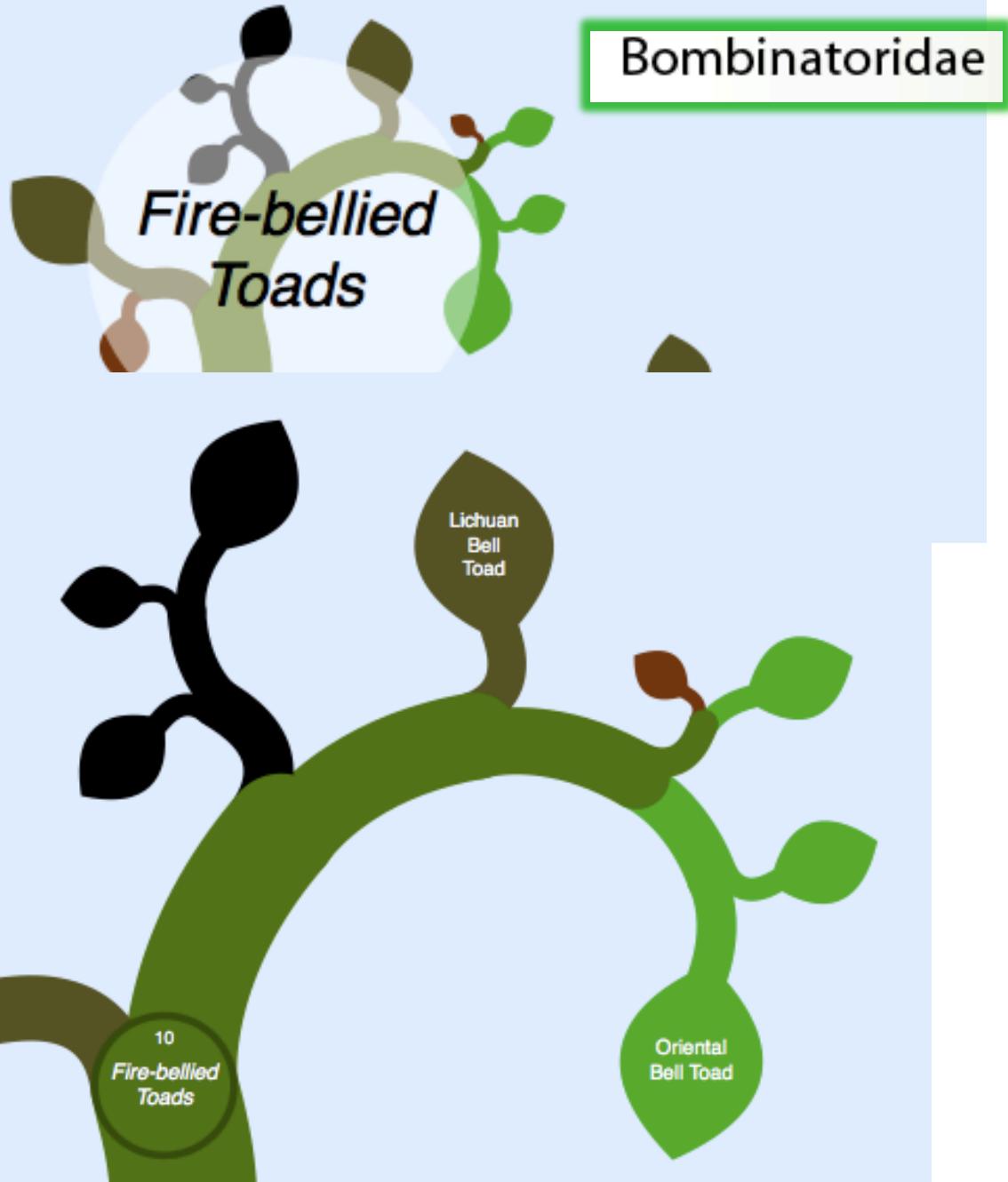


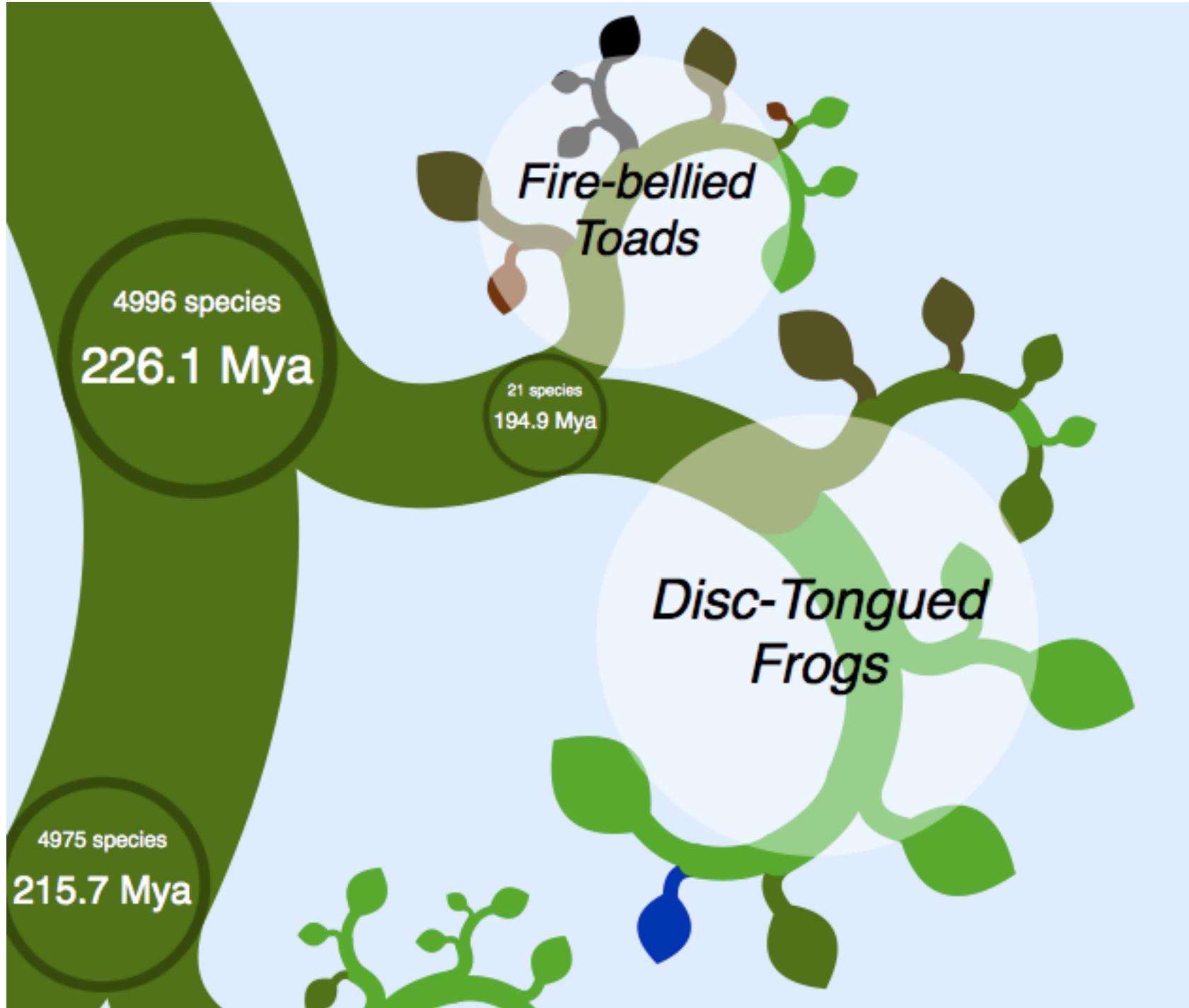




Bombina bombina
PENSOFT pub.

2 Genera,
10 Species





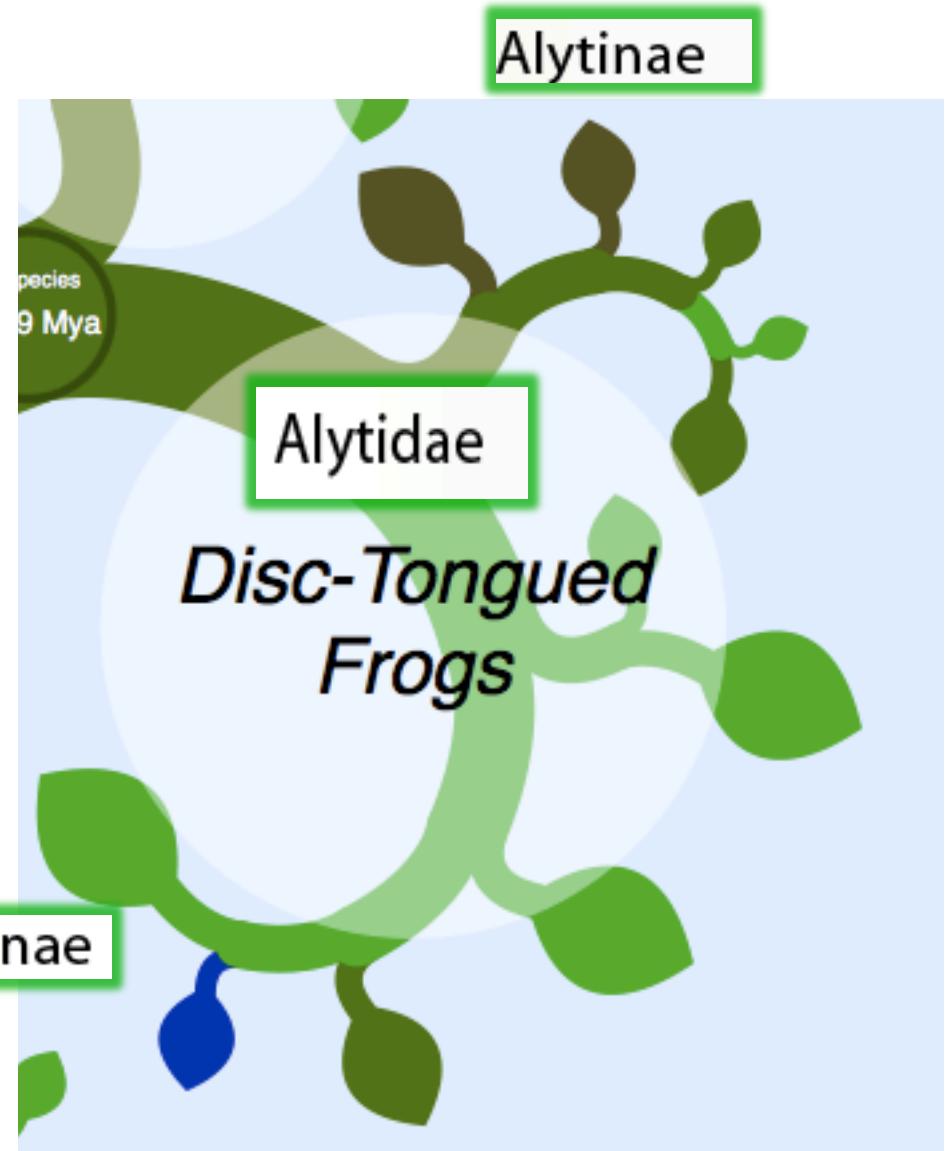
Alytidae

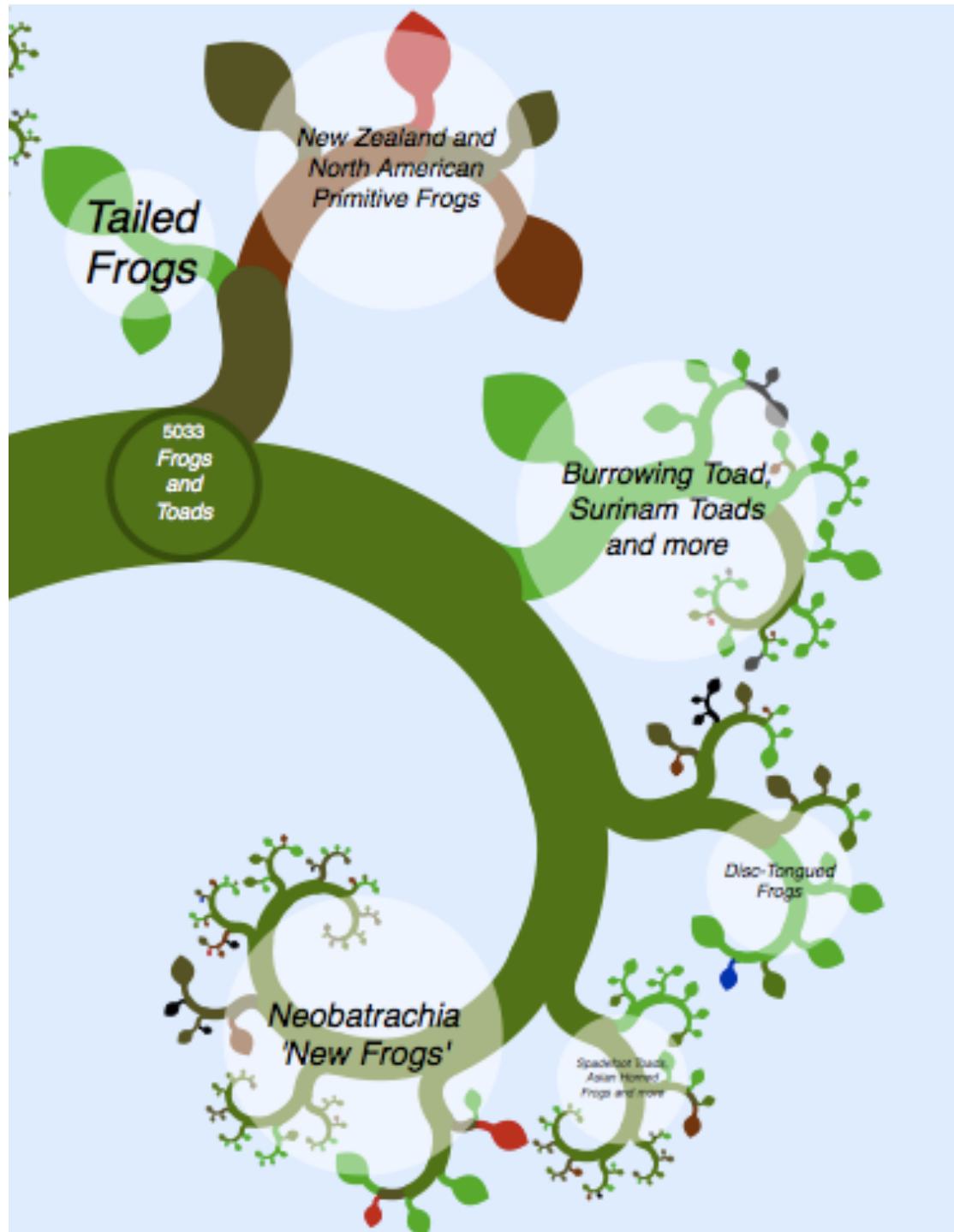
Midwife Toads

3 Genera, 11 Species



Alytes obstetricans obstetricans
Photo by Michael Frede







Pelodytes caucasicus
Photo by D.N. Tarkhnishvili



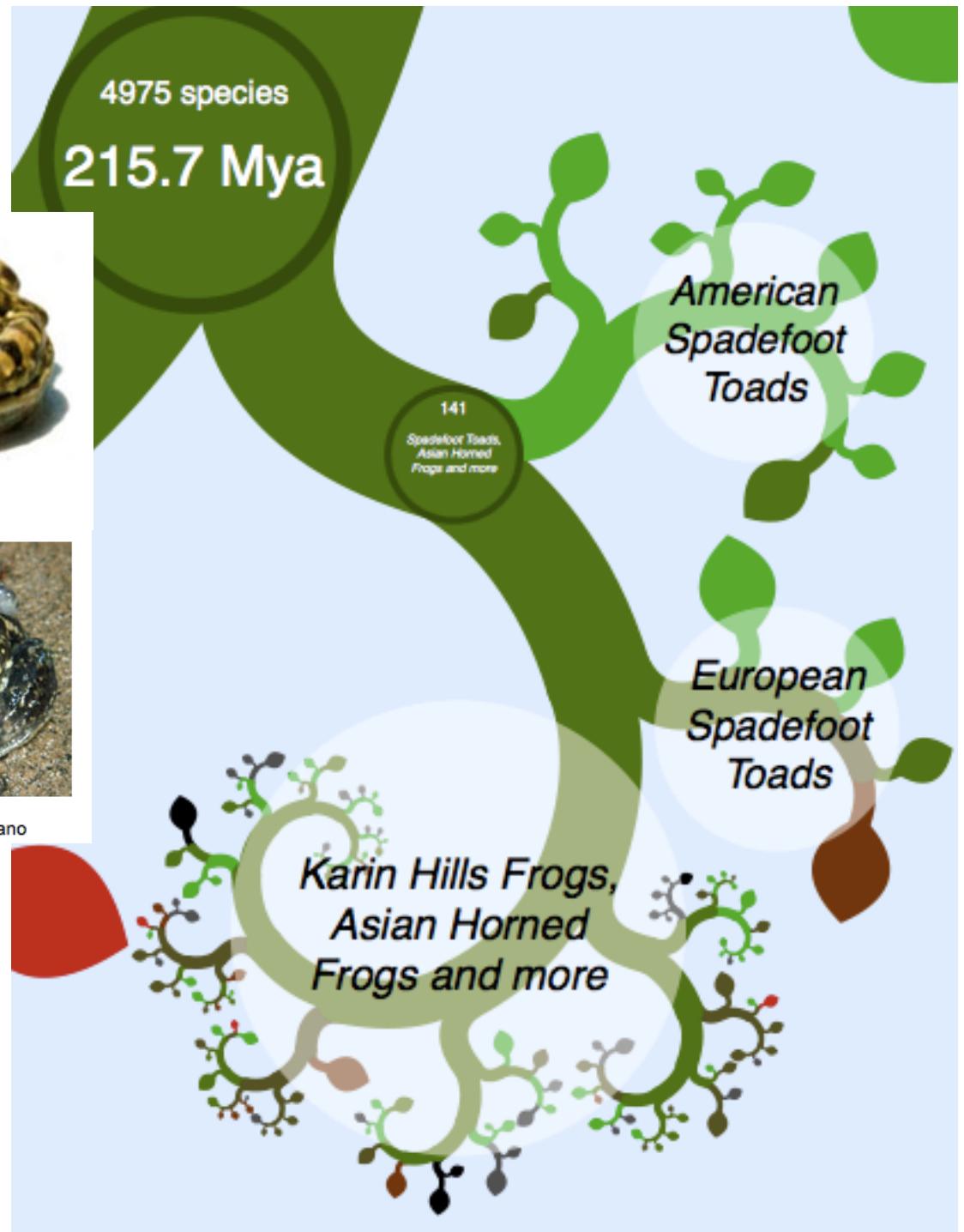
Scaphiopus couchii
Photo by David Wake



Pelobates cultripes
Photo by Iñigo Martínez-Solano



Xenophrys major
Photo by Nikolai Orlov





Pelodytes caucasicus
Photo by D.N. Tarkhnishvili

Pelodytidae

41

Spadefoot Toads,
Horned
Toads
and more

*Pelodytes
ibericus*

10 species
154.2 Mya

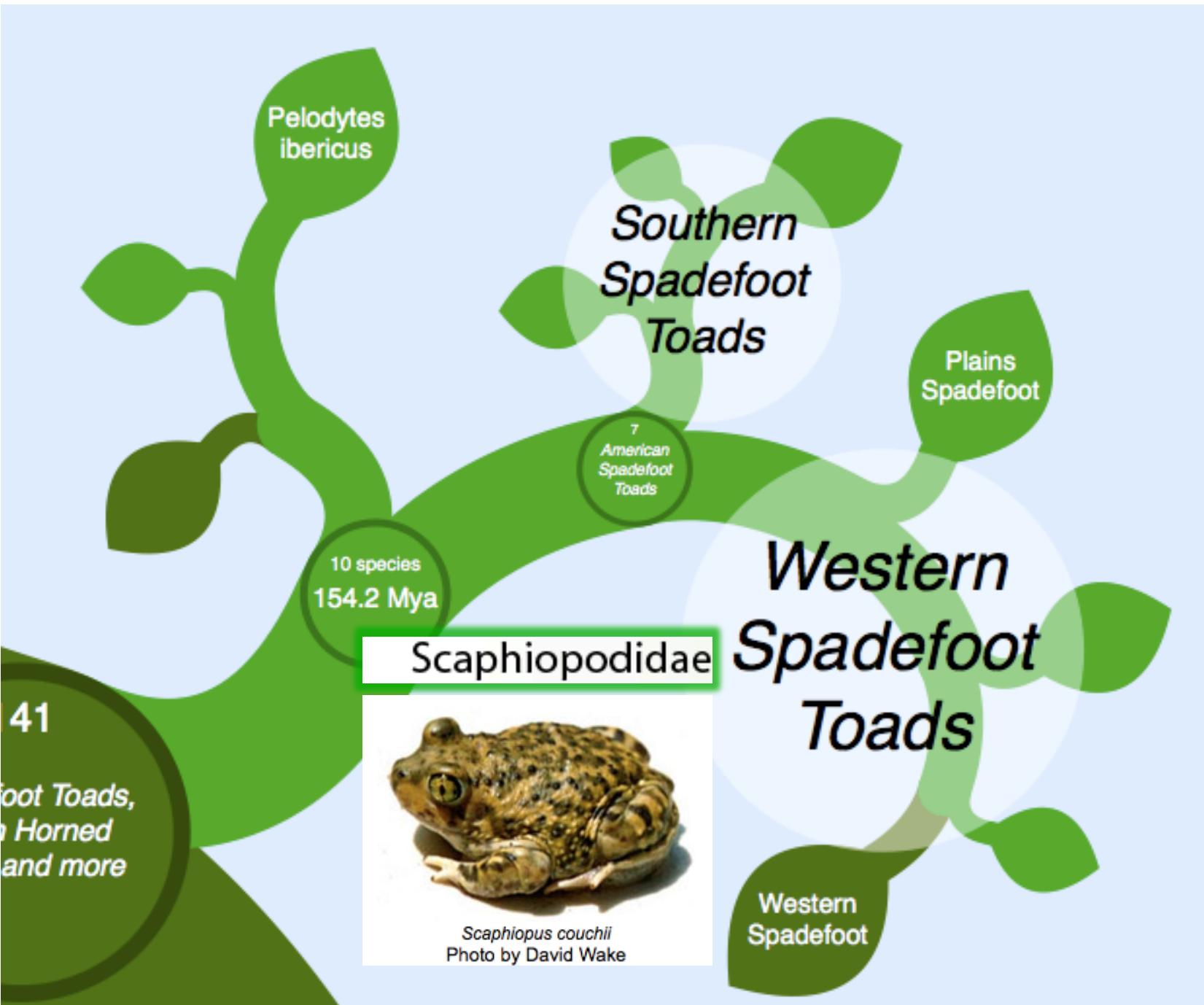
Southern Spadefoot Toads

7 American Spadefoot Toads

Plains Spadefoot

Western Spadefoot Toads

Western Spadefoot



*Scaphiopodidae

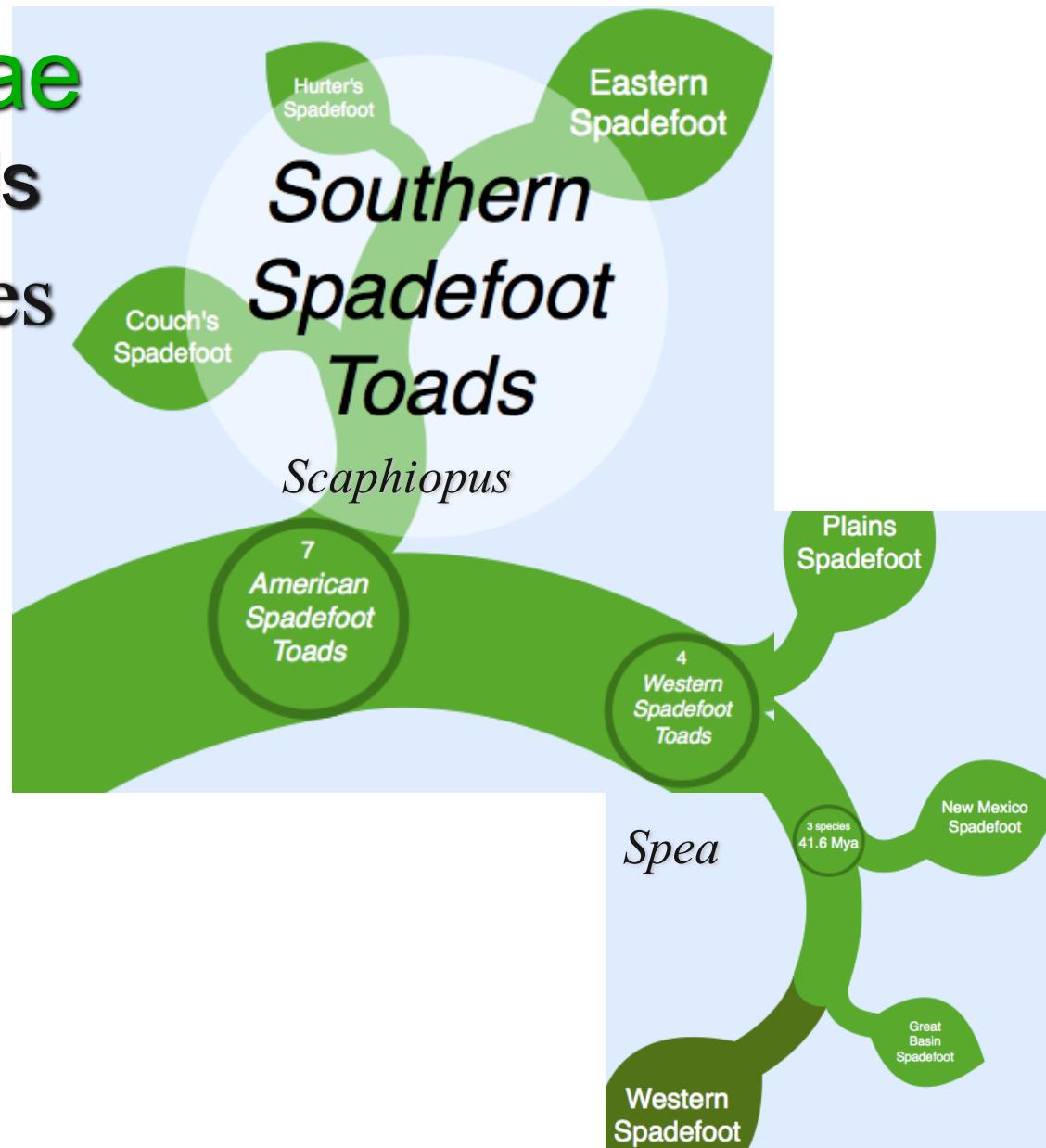
Spadefoot Toads

2 Genera, 7 Species



Scaphiopus couchii
Photo by David Wake

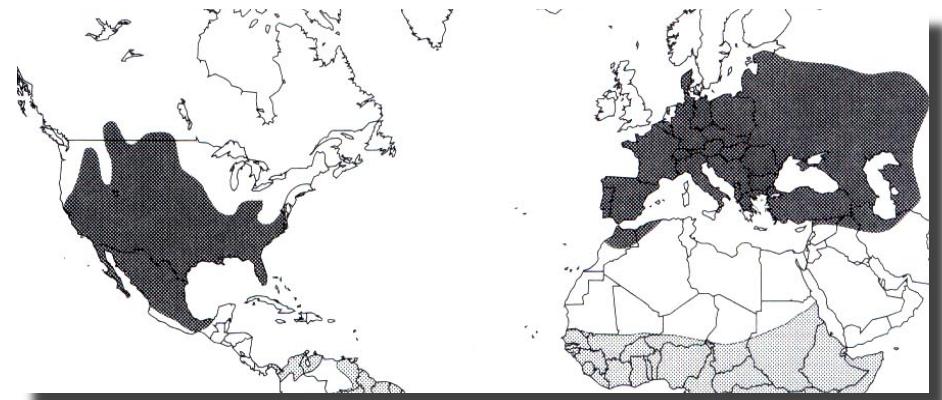
Scaphiopodidae



*Scaphiopodidae

Spadefoot Toads

2 Genera, 7 Species



*Spea
intermontana*

- Keratinous (spade) tubercle
- Burrowers
- Explosive breeders
- Fast development (as fast as 8 days)





Pelodytes caucasicus
Photo by D.N. Tarkhnishvili



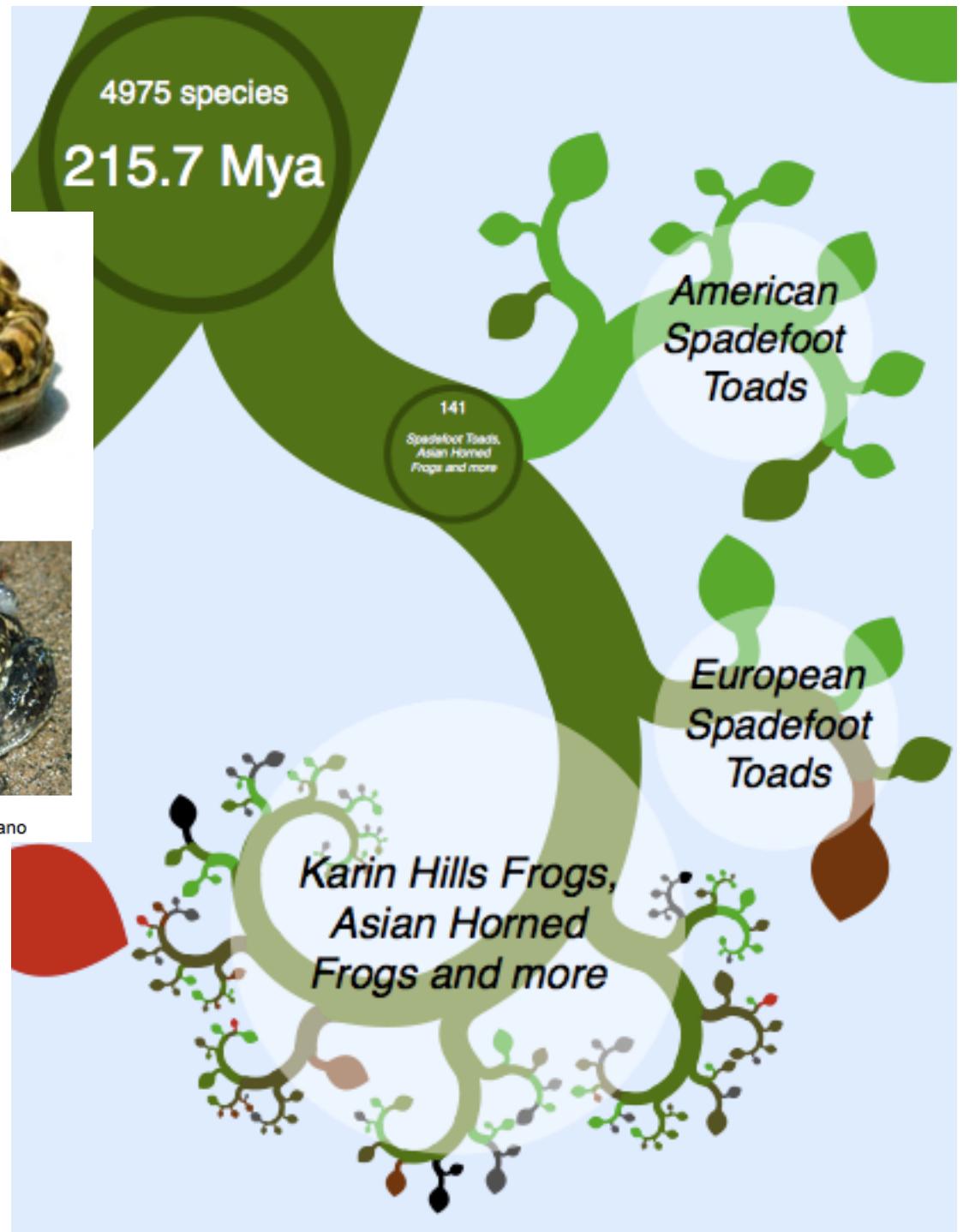
Scaphiopus couchii
Photo by David Wake



Pelobates cultripes
Photo by Iñigo Martínez-Solano



Xenophrys major
Photo by Nikolai Orlov



Pelobatidae





Pelodytes caucasicus
Photo by D.N. Tarkhnishvili



Scaphiopus couchii
Photo by David Wake

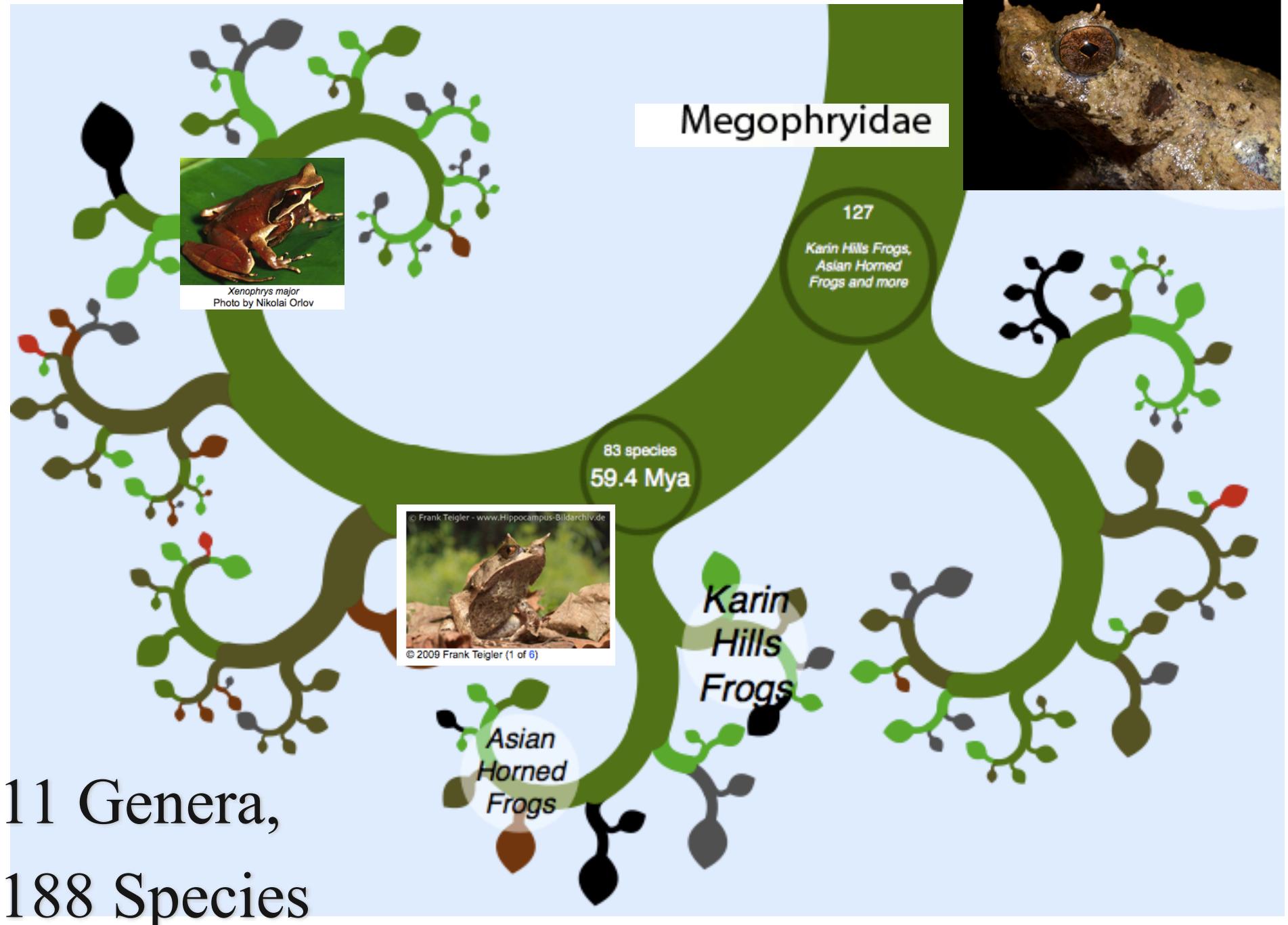


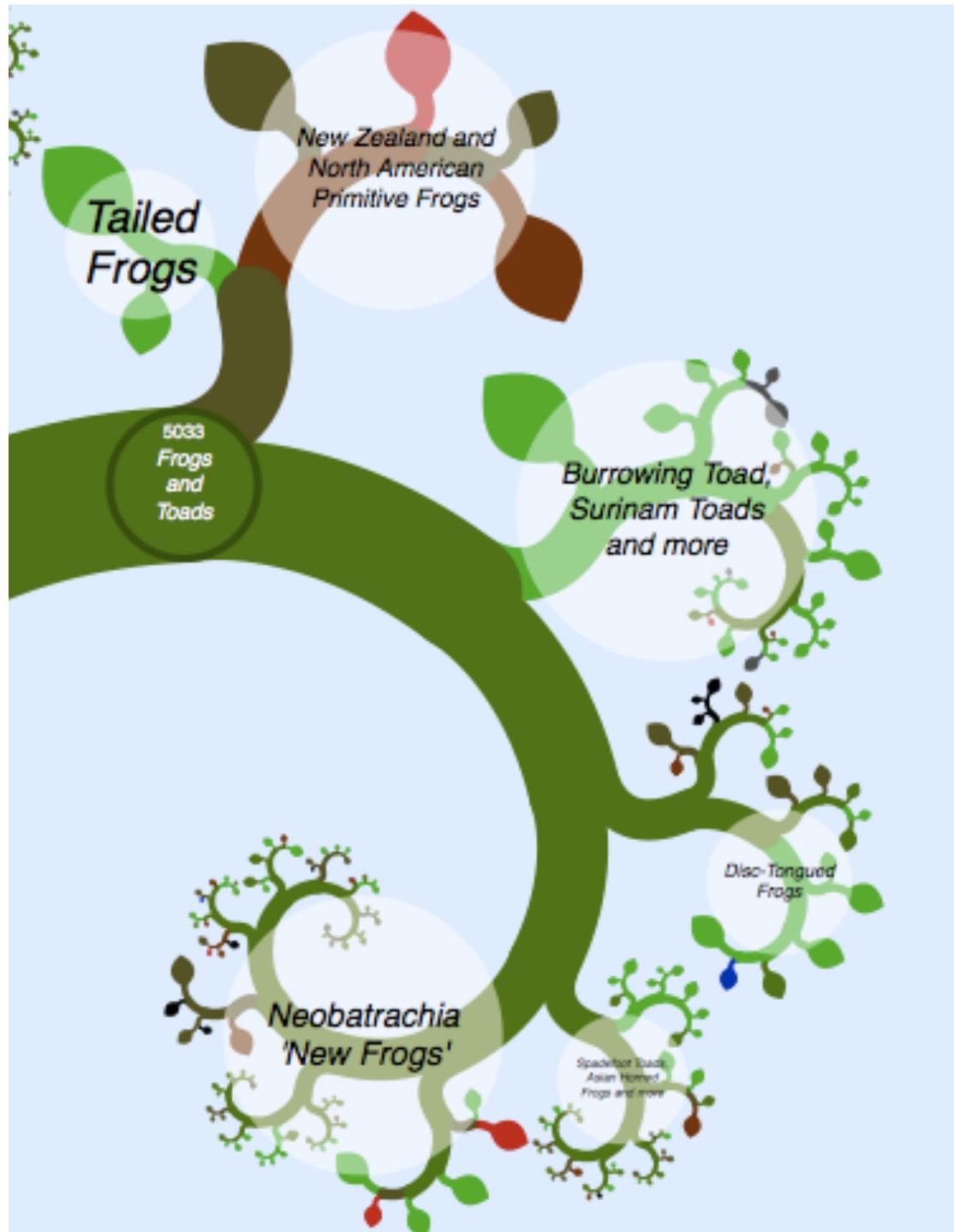
Pelobates cultripes
Photo by Iñigo Martínez-Solano



Xenophrys major
Photo by Nikolai Orlov

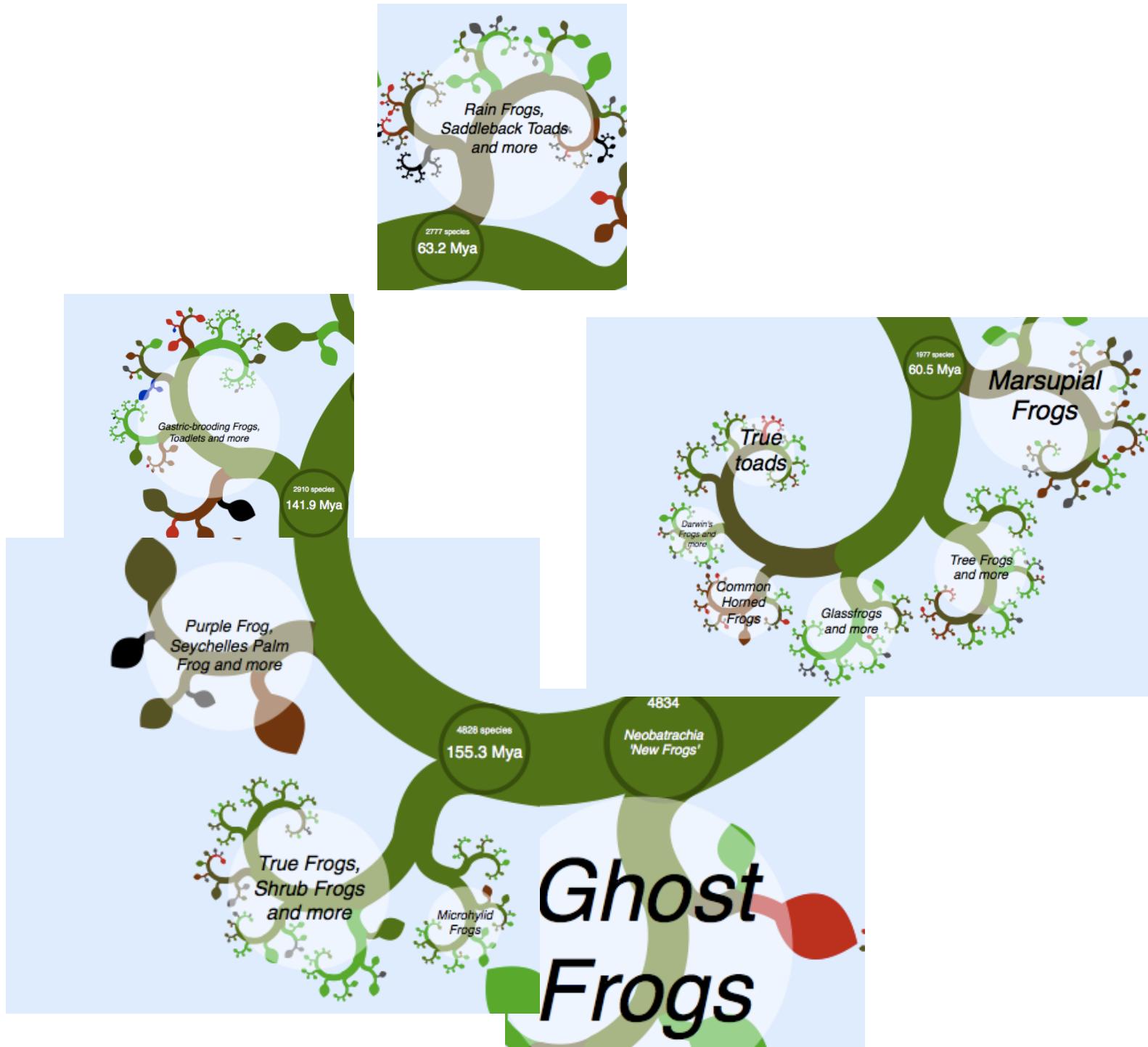




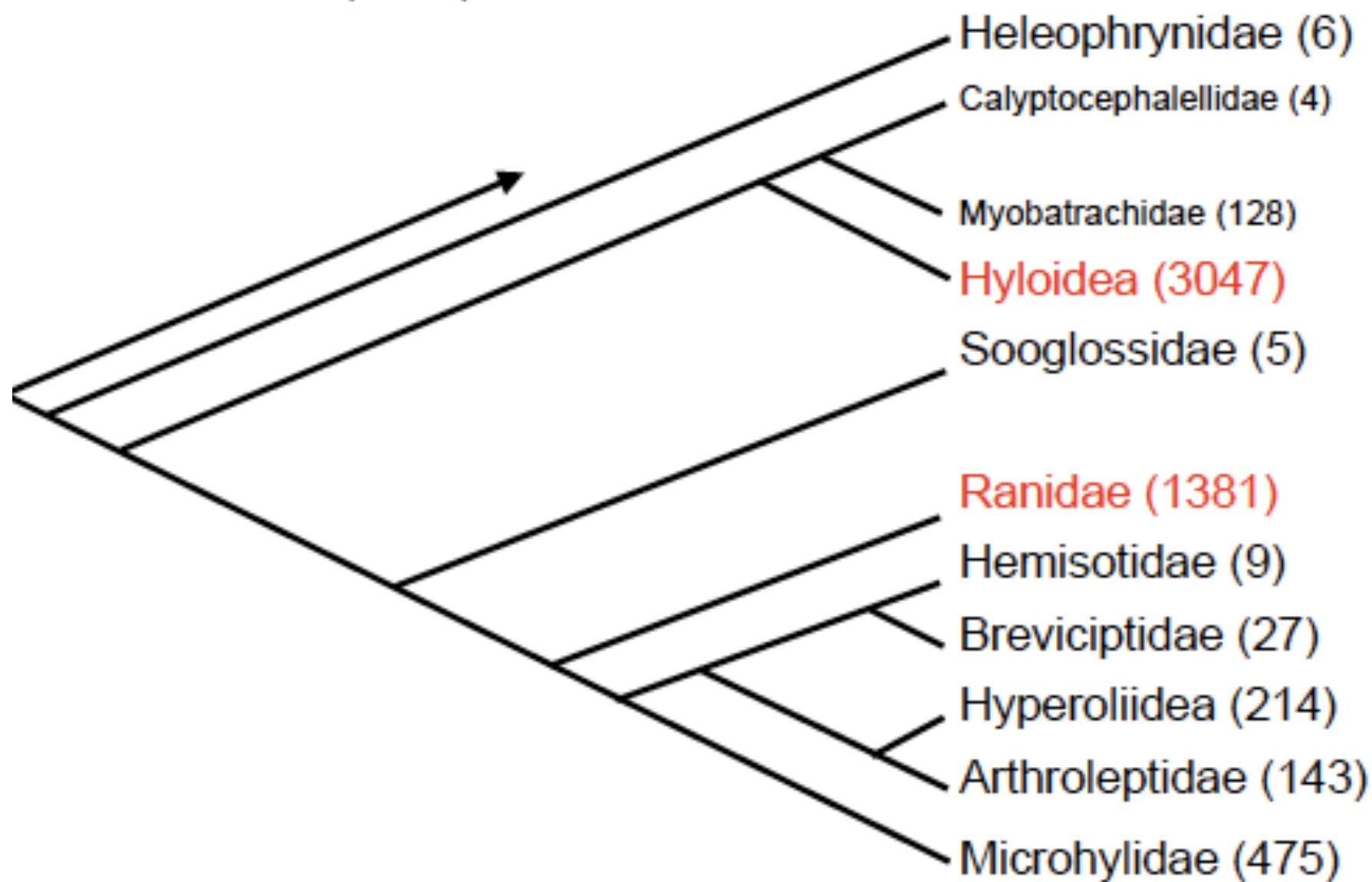


45 Families





Neobatrachia (5281)



45 Families



cles

Mya

Neobatrachia
'New Frogs'

Photo: Miguel Vences



Heleophryne regis
Photo by Miguel Vences and
Frank Glaw

⁸
*Ghost
Frogs*

Table
Mountain
Ghost Frog

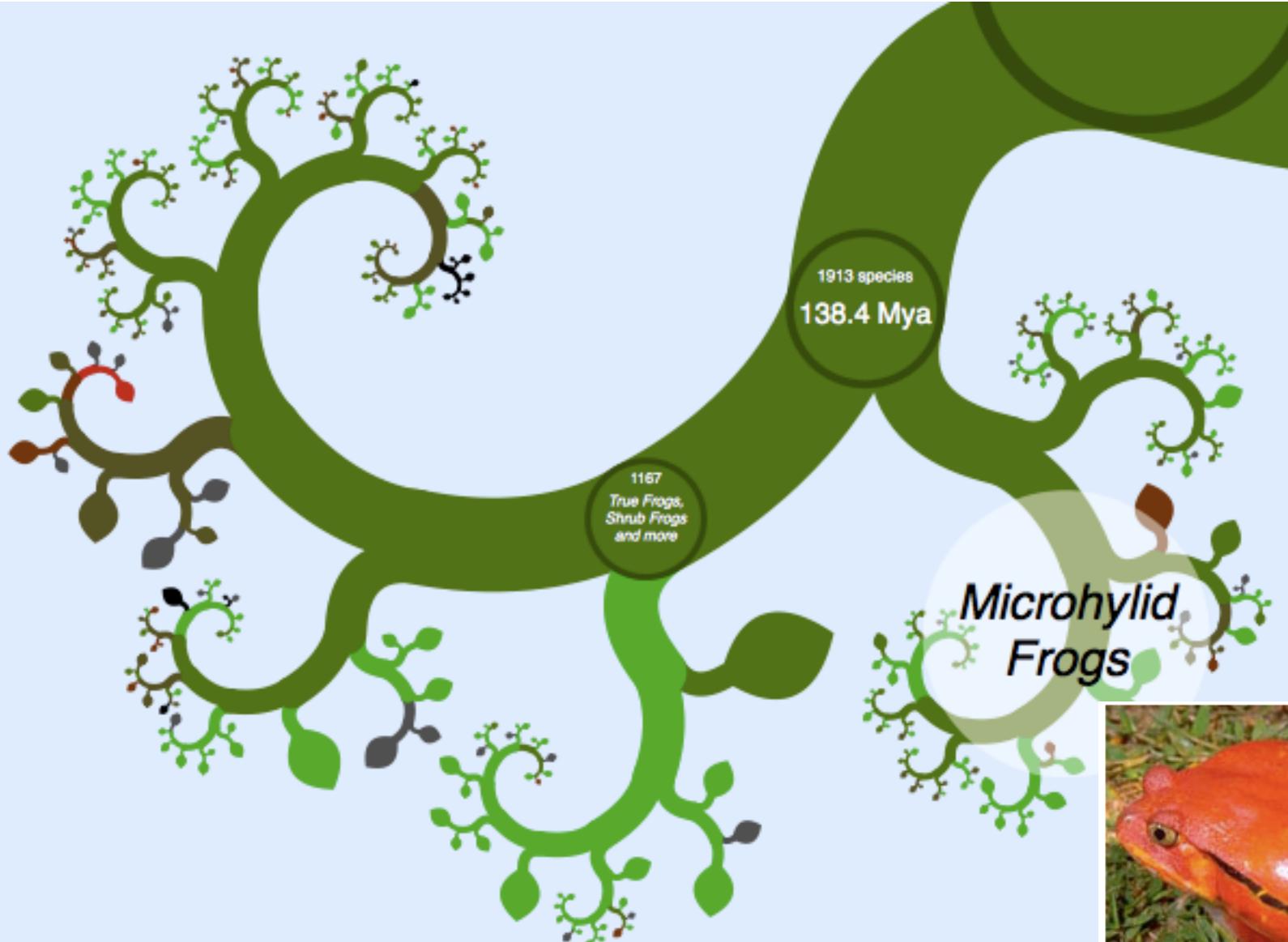
Royal
Ghost
Frog

Purcell's
Ghost Frog

Eastern
Ghost
Frog

45 Families





Dyscophus antongilli
Photo by Franco Andreone

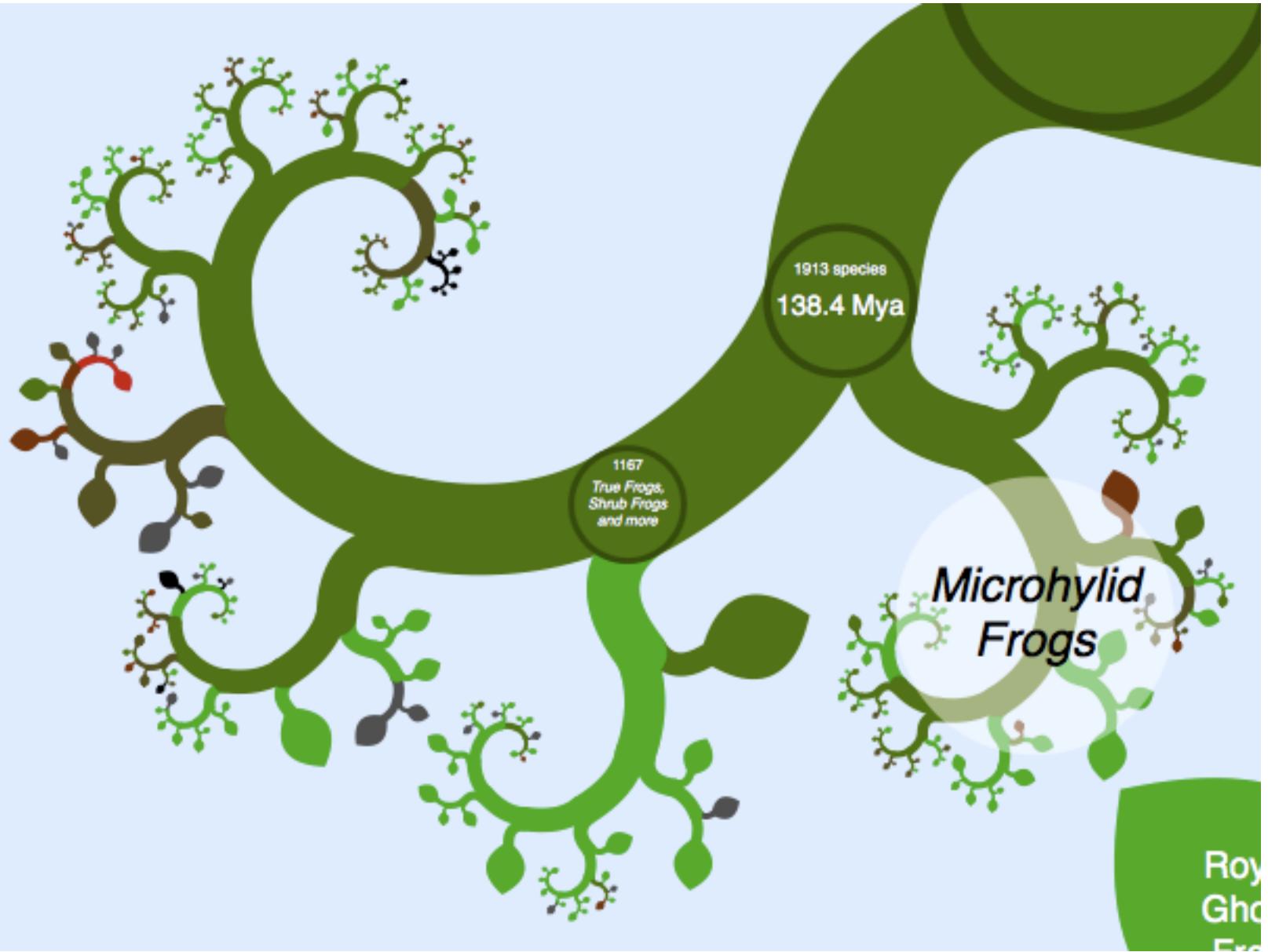
*Microhylidae

Narrow-mouthed Frogs

62 Genera, 563 Species



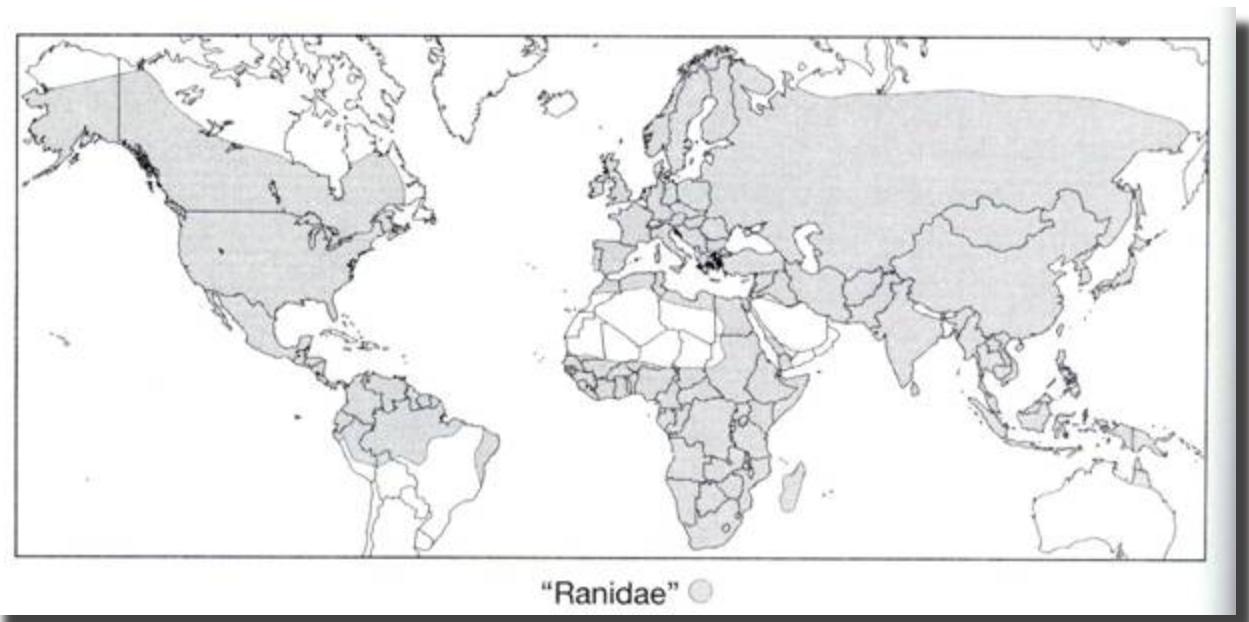
- Unique larval mouthparts
- Most small, live from rain forest to desert
- Lack tympanum
- Squat body shape
- Unique fold of skin behind eye





*True Frogs,
Shrub Frogs
and more*

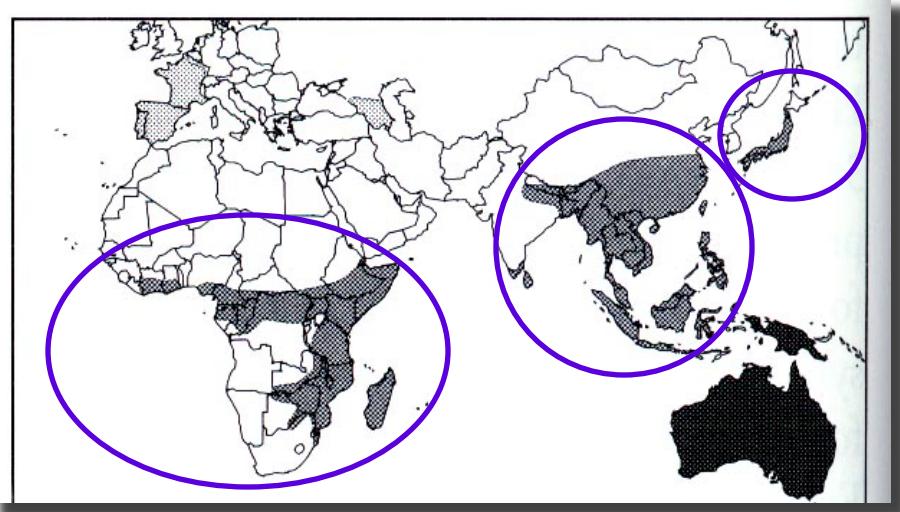
***Ranidae**
True Frogs
14 Genera
366 Species



- Likely not monophyletic
- Most lay eggs in water, but varied reproductive strategies
- Body form quite variable

***Rhacophoridae** Flying Frogs

18 Genera, 375 Species



© 2009 Maximilian Dehling (1 of 1)

- Arboreal
- Toe discs, webbing
- parachute
- Eggs in water
or foam nests

45 Families





Nasikabatrachus sahyadrensis
Photo by Biju Das

Purple Frog, Seychelles Palm Frog and more

Purple
frog

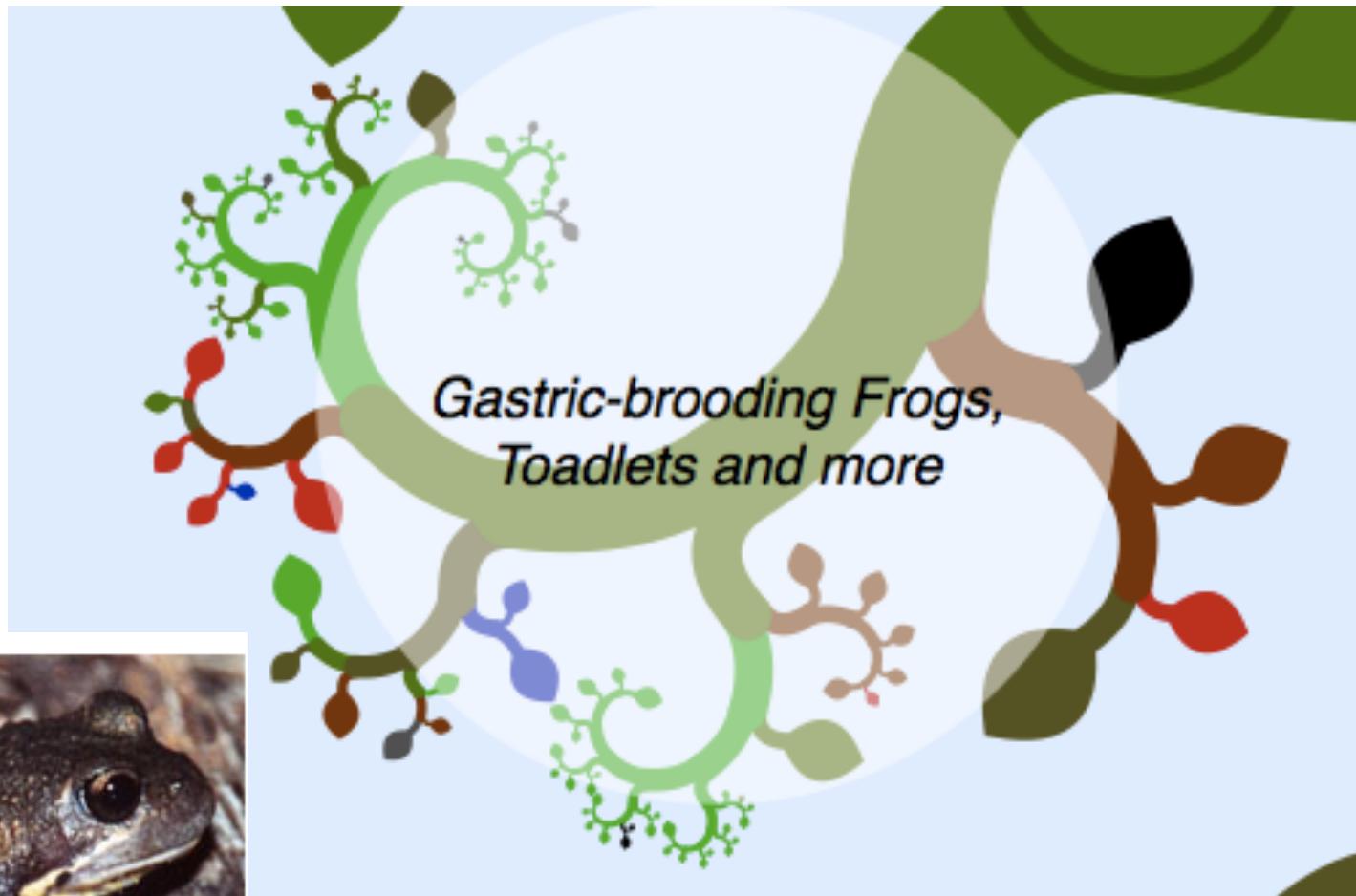
Sooglossus
sechellensis

45 Families



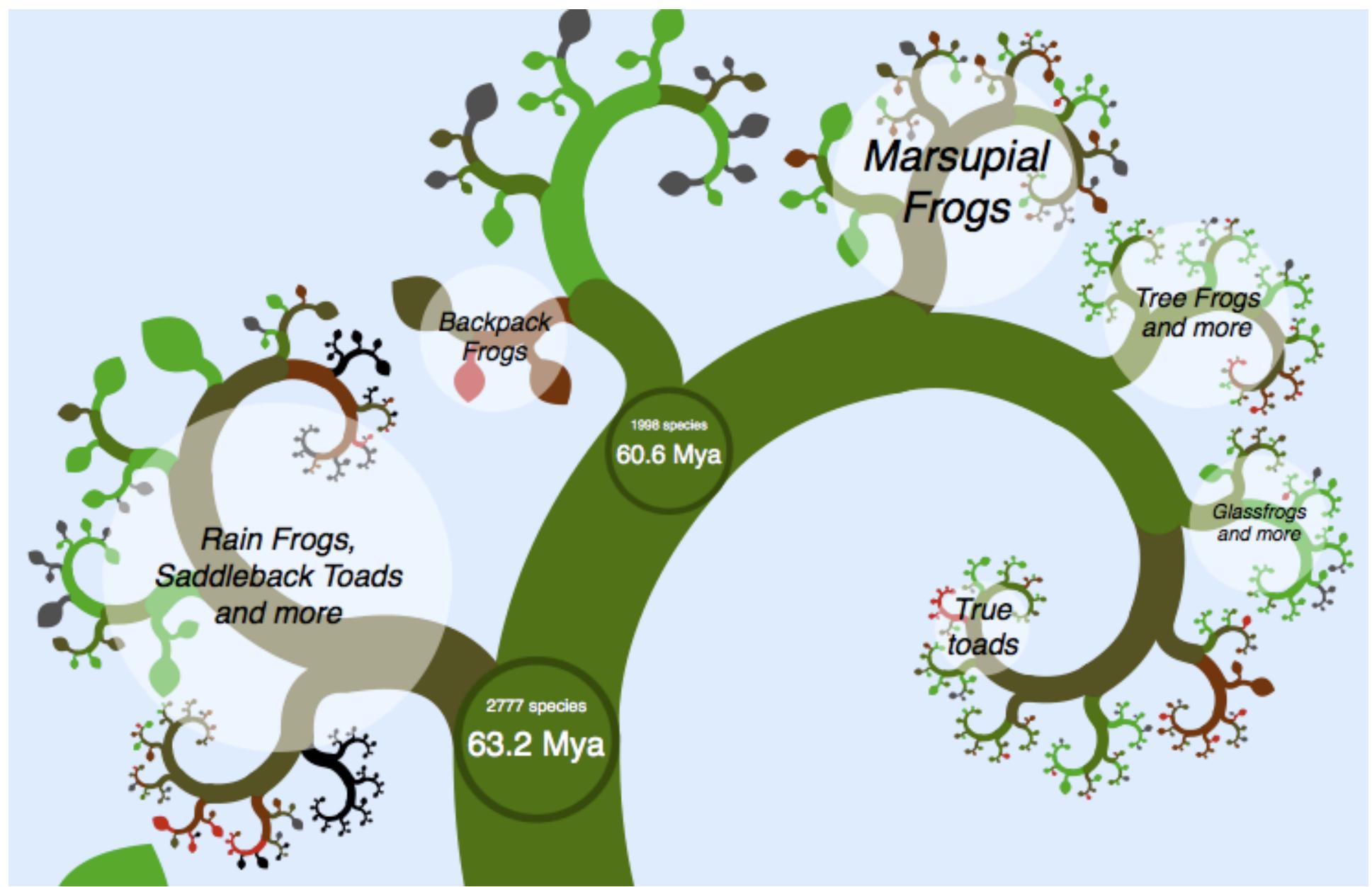


Limnodynastes dumerilli
Photo by Sean Schoville



45 Families





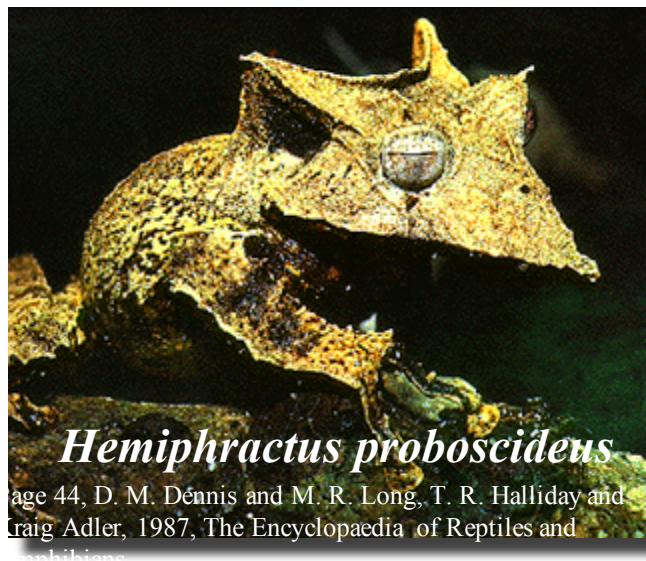


Tree Frogs and more

920 species
3.8 Mya

*Hylidae Treefrogs

50 Genera 947 Species



age 44, D. M. Dennis and M. R. Long, T. R. Halliday and Craig Adler, 1987, The Encyclopaedia of Reptiles and Amphibians



- Arboreal, toe discs, most strong jumpers
- *Phyllomedusa* glandular
- Some parental care, especially in hemophractines (carrying tadpoles, pouches)
- Many have unusual skulls

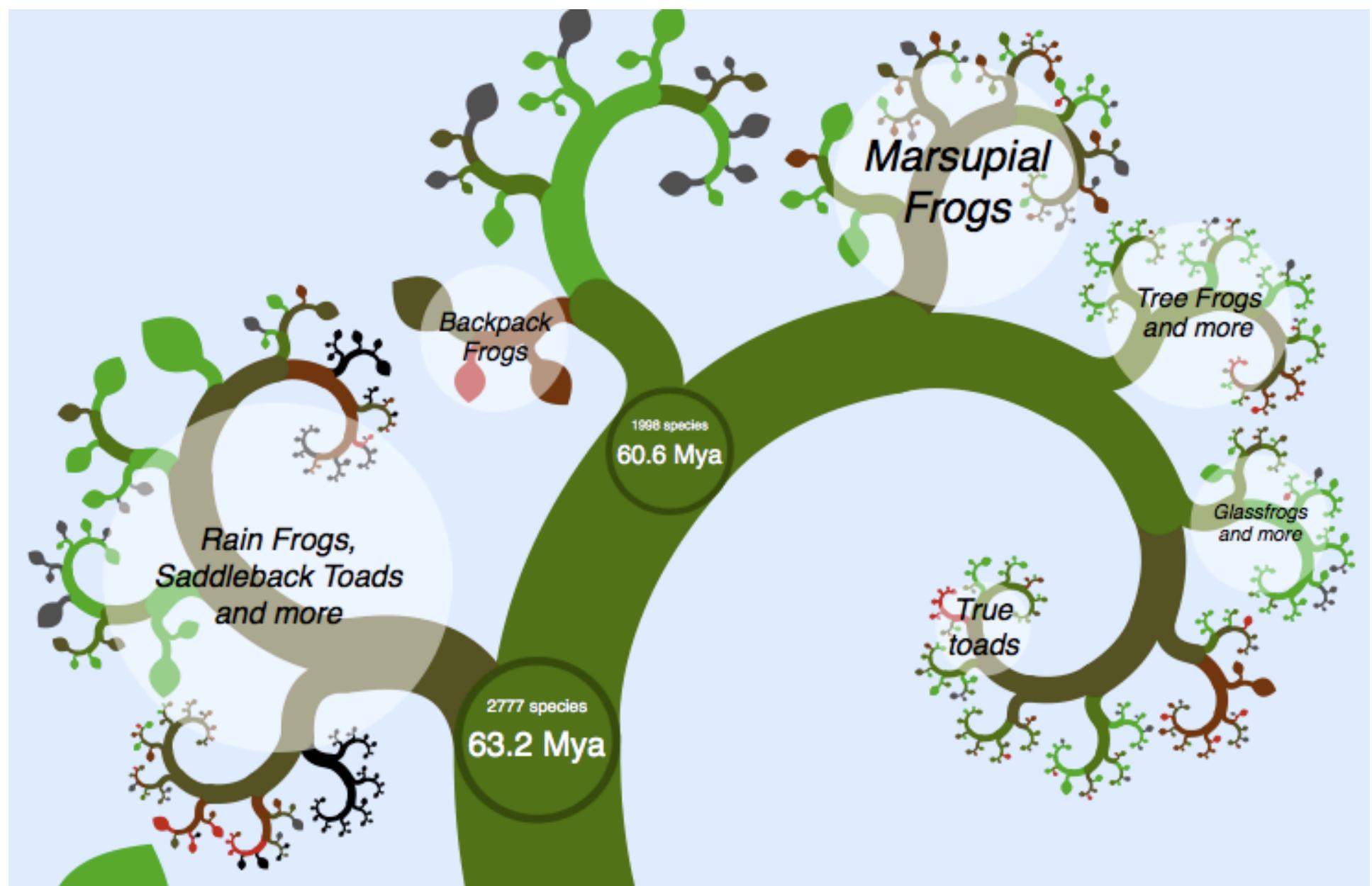
*Leptodactylidae

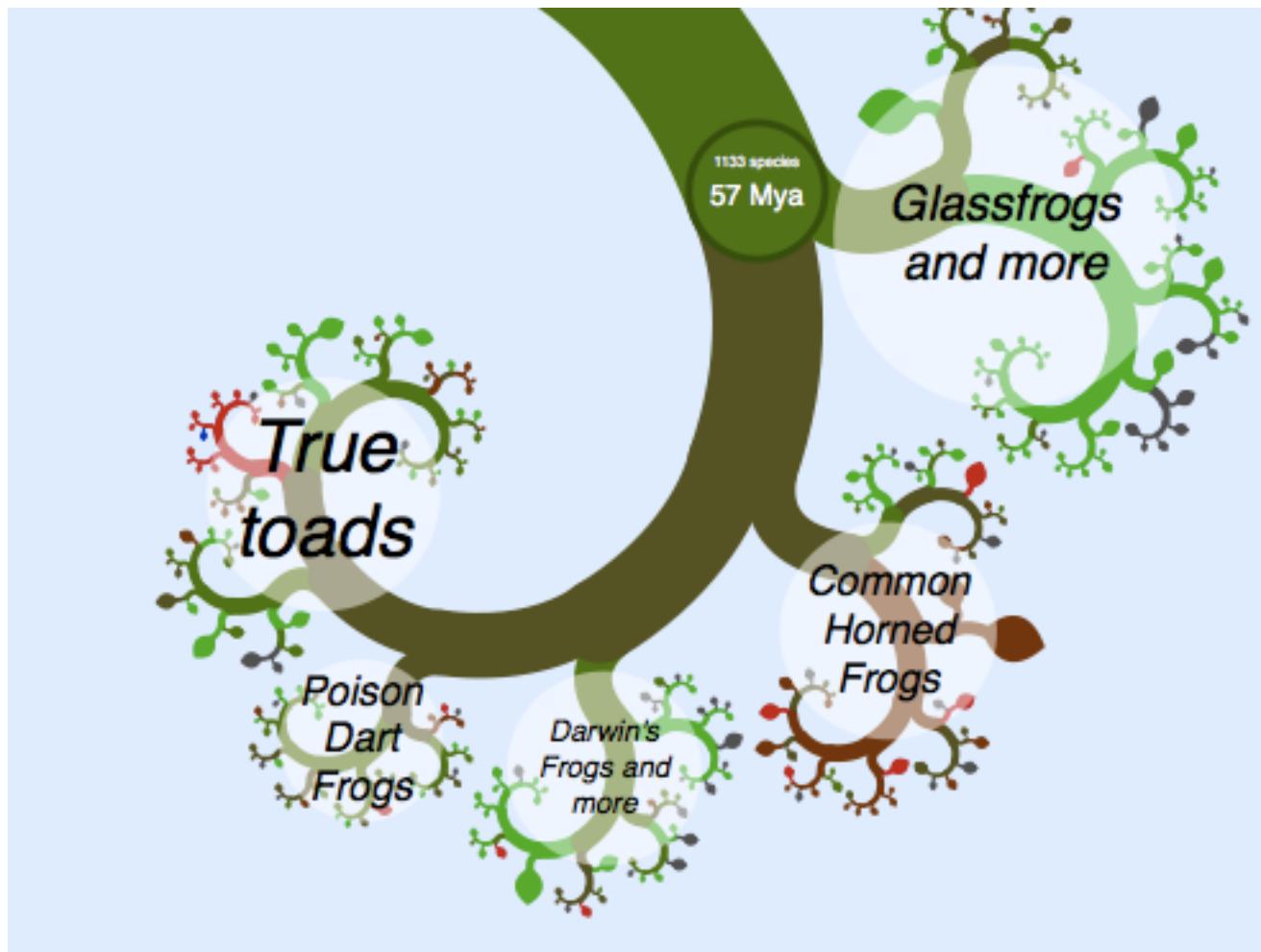
Tropical Frogs

14 Genera, 201 Species



- Extremely diverse, but mostly small, leaf litter frogs
- Strong dorsolateral fold
- Long, slender digits lack webbing!
- *Eleutherodactylus* directly develop
- *Ceratophrys* sit and wait predators





*Dendrobatidae

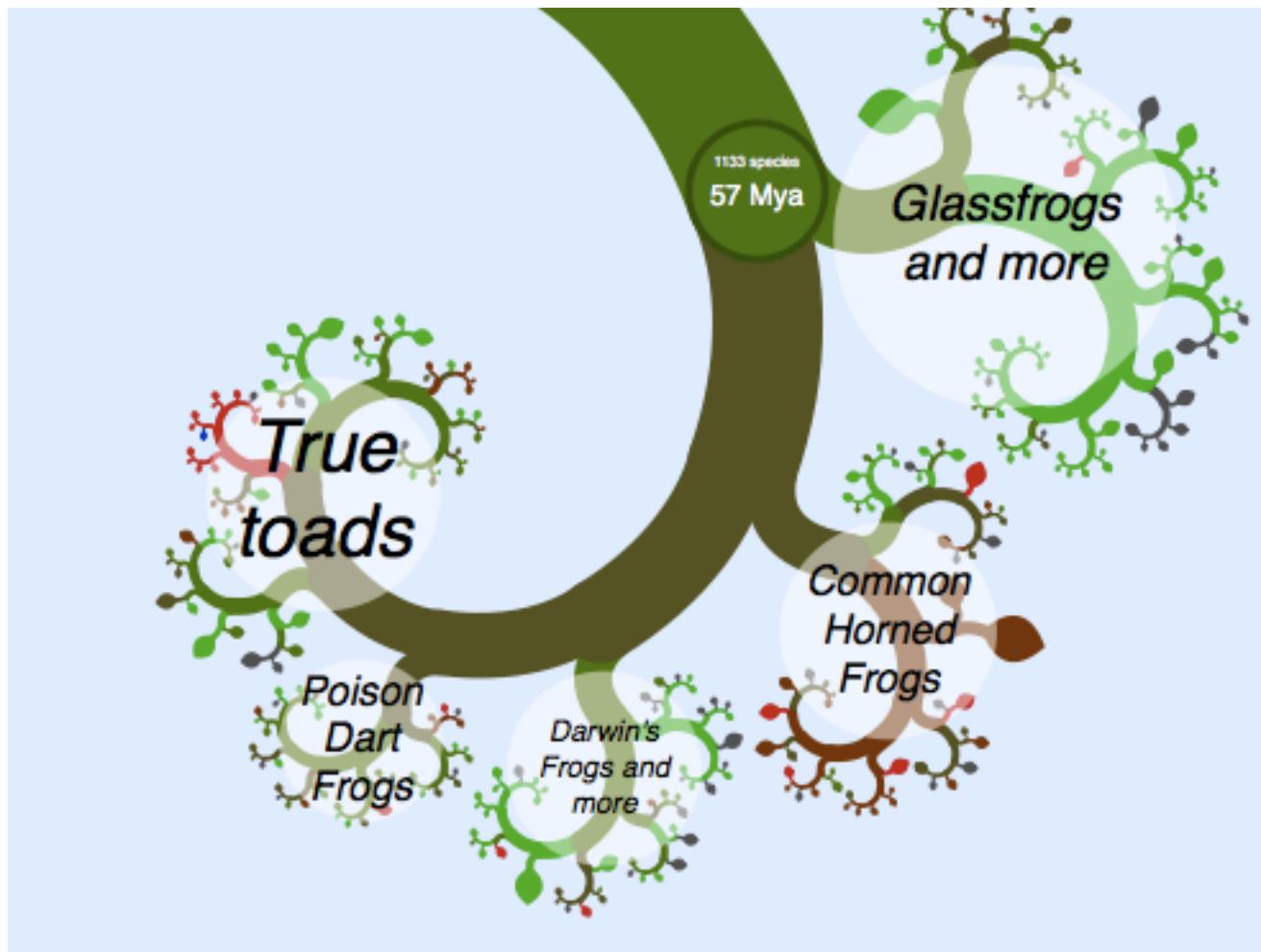
Poison Frogs

11 Genera

300 Species



- Diurnal and terrestrial
- Toxicity derived character w/in family
- High parental care (guarding, carrying, feeding)



***Bufonidae**
True Toads
50 Genera
590 Species



Bufo boreas



- Teeth absent
- Many skin glands
- Produce toxins/secretions
- Generally terrestrial
w/tadpoles in ponds &
streams- lots of variation

PAROTOID GLANDS



BUFO



Invasive

Giant Toad - *Bufo marinus*



Atelopus

Harlequin Frogs

